ELECTROTECHNOLOGY
TRAINING PACKAGE
UEE06

Training Package Qualifications

Note: The volumes making up this Training Package should not be read in isolation – all volumes form part of an integrated whole

Electrotechnology Training Package UEE06 – Version Number 1. Review Date 31 Dec 2008

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Training Package Qualifications

The following qualifications are contained in this Electrotechnology Training Package (UEE06):

Note: Qualifications in italics have been reserved and will be developed as part of EE-Oz Training Standards continuous improvement processes associated with this Training Package.

Summary List of Electrotechnology qualifications	
Code	**Certificate I Qualifications**
UEE10106	Certificate I in ElectroComms Skills

Code	**Certificate II Qualifications**
UEE20106	Certificate II in Air-conditioning Split Systems
UEE20206	Certificate II in Business Equipment Servicing
	*Certificate II in Electrotechnology Business Support**
UEE20406	Certificate II in Winding and Assembly
UEE20506	Certificate II in Computer Assembly and Repair
UEE20606	Certificate II in Custom Electronics Assembly and Setup
UEE20706	Certificate II in Data and Voice Communications
	*Certificate II in Electrical Wholesaling**
UEE20906	Certificate II in Electronic Assembly
UEE21005	Certificate II in Fire Alarms Servicing
UEE21106	Certificate II in Gaming Machines Servicing
UEE21206	Certificate II in Antennae Equipment
UEE21306	Certificate II in Remote Area Essential Service
UEE21406	Certificate II in Remote Area Power Supply Maintenance
UEE21506	Certificate II in Renewable Energy
UEE21606	Certificate II in Security Assembly and Setup
UEE21706	Certificate II in Technical Support
UEE21806	Certificate II in Appliance Servicing – Refrigerants

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Code	Certificate II Qualifications
UEE21906	Certificate II in Electronics
UEE22006	Certificate II in Electrotechnology (Career Start)
UEE22106	Certificate II in Sustainable Energy (Career Start)

Code	Certificate III Qualifications
UEE30106	Certificate III in Business Equipment
UEE30206	Certificate III in Computer Equipment
UEE30306	Certificate III in Custom Electronics Installations
UEE30406	Certificate III in Data and Voice Communications
UEE30506	Certificate III in Appliance Servicing
UEE30606	Certificate III in Electrical Machine Repair
UEE30706	Certificate III in Switchgear and Control Gear
UEE30806	Certificate III in Electrotechnology Electrician
UEE30906	Certificate III in Electronics and Communications
UEE31006	Certificate III in Fire Protection Control
UEE31106	Certificate III in Gaming Electronics
UEE31206	Certificate III in Instrumentation and Control
UEE31306	Certificate III in Refrigeration and Air-Conditioning
UEE31406	Certificate III in Security Equipment
UEE31506	Certificate III in Rail – Communications and Networks
	*Certificate III in Wireless Communications**
UEE31706	Certificate III in Hazardous areas – Electrician
UEE31806	Certificate III in Hazardous areas – Instrumentation
UEE31906	Certificate III in Explosion-protected equipment overhaul

Code	Certificate IV Qualifications
UEE40106	Certificate IV in Computer Systems
UEE40206	Certificate IV in Electrical – Data and Voice Communications
UEE40306	Certificate IV in Electrical Installation Inspection and Audits

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Code	Certificate IV Qualifications
UEE40406	Certificate IV in Electrical – Instrumentation
UEE40506	Certificate IV in Electrical – Air-Conditioning Systems
UEE40606	Certificate IV in Electrotechnology – Systems Electrician
UEE40706	Certificate IV in Electronics and Communications
UEE40806	Certificate IV in Electrical – Fire Protection Control Systems
UEE40906	Certificate IV in Industrial Electronics and Control
UEE41006	Certificate IV in Energy Management and Control
UEE41106	Certificate IV in Electrical – Lift Systems
UEE41206	Certificate IV in Electrical – Rail Signalling
UEE41306	Certificate IV in Refrigeration and Air-Conditioning Servicing
UEE41406	Certificate IV in Refrigeration and Air-Conditioning Systems
UEE41506	Certificate IV in Video and Audio Systems
UEE41606	Certificate IV in Renewable Energy
UEE41706	Certificate IV in Rail – Communications and Network Systems
UEE41806	Certificate IV in Hazardous areas

Code	Diploma Qualifications
UEE50106	Diploma of Computer Systems Engineering
UEE50206	Diploma of Electrical and Instrumentation
UEE50306	Diploma of Electrical and Refrigeration and Air-Conditioning
UEE50406	Diploma of Electrical Engineering
UEE50506	Diploma of Electronics and Communications Engineering
UEE50606	Diploma of Refrigeration and Air-Conditioning Engineering
UEE50706	Diploma of Renewable Energy Engineering
UEE50806	Diploma of Research and Development
UEE50906	Diploma of Industrial Electronics and Control Engineering

Code	Advanced Diploma Qualifications
UEE60106	Advanced Diploma of Electrical Engineering
UEE60206	Advanced Diploma of Electronics and Communications Engineering

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Code	Advanced Diploma Qualifications
UEE60306	Advanced Diploma of Electrical/Electronic – Technology
UEE60406	Advanced Diploma of Computer Systems Engineering
UEE60506	Advanced Diploma of Computer Systems – Technology
UEE60606	Advanced Diploma of Industrial Electronics and Control Engineering
UEE60706	Advanced Diploma of Refrigeration and Air-Conditioning Engineering
UEE60806	Advanced Diploma of Refrigeration and Air-Conditioning – Technology
UEE60906	Advanced Diploma of Renewable Energy Engineering
UEE61006	Advanced Diploma of Renewable Energy – Technology
UEE61106	Advanced Diploma of Automated Systems Maintenance Engineering
UEE61206	Advanced Diploma of Engineering – Explosion protection

** To be developed as part of continuous improvement*

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ELECTROTECHNOLOGY TRAINING PACKAGE

UEE06
Volume 1 — Preliminary Information

Volume 1 of 2

Note: **The volumes that make up this Training Package should not be read in isolation. The two volumes form part of an integrated whole.**

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Preliminary Information

The Electrotechnology Industry

The rate of technological change within the Electrotechnology industry has never been greater and is expected to increase. For example, the use of 'smart' technology such as home automation and the integration of systems, including voice and data, is now commonplace in many sectors of the industry. The industry continues to expand and develop and its personnel must develop increasingly sophisticated technical skills and problem solving abilities. Apprentices and skilled operatives are expected to build high levels of competency, flexibility and capabilities across a wide range of equipment, technologies, processes and procedures and be prepared for continuous development of their knowledge and skills throughout their working life.

Severe skills shortages currently affecting the Electrotechnology industry are projected to increase as the supply of skilled tradespersons in the industry continues to fall short of current market demand and rapid growth in the volume of work continues to exceed the available supply of skilled labour, particularly in areas incorporating advanced technologies.

The industry:

- employs around 467,000 people, including 170,000 in communication; 142,000 in installation trade services; 100,000 in construction and building maintenance; 25,000 electrical and electronic engineers; and 163,000 computer professionals (repair and servicing)
- covers more than 73 Qualifications from Certificate I through to Advanced Diploma.

Current skill shortages at trade and post-trade technical levels are expected to worsen over the next five years, and are attributed to:

- insufficient numbers employed and in training (apprenticeships, traineeships, cadetships) to replenish the existing stock of employees retiring from the industry
- attrition from the ranks of skilled and experienced workers combined with an ageing work force
- economic and cyclical downturn
- a continued and rapid change in the breadth and skills sets required of post entry level training, caused by rapidly changing technological environment, especially in; renewable energies, computer systems, medical, speed of new products to market, product lifecycles and equipment servicing; and voice and data communications
- a decline in post-trade training program attendances at RTOs (e.g TAFE) to upgrade skill sets. At the same time, work is increasingly being transferred from traditional large industry in-house employment with structured career paths to contracted work/small business.
- strong growth in occupations such as computer hardware professional and support technicians, and
- a limited number of women in both traditional and growth occupations.

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Within the Electrotechnology industry, the communications sector has grown by about 20 per cent since 1997. At present:

- Communications employment is undergoing a major restructure due to the Telco's downsizing and contracting out of services.
- A key feature of restructure is entry of small, specialist companies ie existing electrical contractors expanding their scope of work to include communications work.
- New communications networks/technologies are being developed based on wireless, microwave and satellite network systems.

New OHS and environmental legislative requirements have impacted on training and retraining needs across these industry sectors, for management, professional, paraprofessional, and operative technical workers.

- Standards and training resources need to be developed and continually updated to meet technological cutting edge requirements, and respond to changes, such as local and regional expectations. This is also in the case of electronics based training in regional areas where community numbers are generally declining, leading to broader based skills being needed to attend to equipment/technologies that are ageing, broader in range, and new.
- More dual trade programs/apprenticeships are needed to compensate for skill shortages, technological change and shift to systems based product and life-cycle (short) design.
- RTOs (eg TAFE) enrolment trends reveal that over the past four years enrolments at the associate professional level have dropped by more than 40 per cent.
- Customer service and increased demand for new products driving the demand for new training.
- Fewer workers are participating in post-trade training and more full-time students are undertaking paraprofessional programs (Diploma and Advanced Diploma) with these programs rarely matching the changing employment market/jobs.
- Many existing workers, in related occupations, do not have access to nationally recognised training.
- New regulatory and technical standards have led to improvements and changes being made to existing training standards, programs and resources.

Industry Coverage

The Industry of ElectroComms (Electrotechnology-Communications) covers electronics, electrical, communications including telecommunications, data and information technology, computer systems, instrumentation, lifts, refrigeration and air conditioning, and renewable/sustainable energy, fire and security, appliances, gaming and rail.

The Australian Standard Classifications of Occupation (ASCO) defines a number of occupations served by this Training Package.

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Electrical and electronics vocations cover design, research, assembly, installation, construction, diagnosis, maintenance, commission, programming, testing or repair work. They encompass electrical and electronics networks, systems, circuits, equipment, components, appliances, facilities, and communications including telecommunications – voice, data, video and information technology, computer systems, instrumentation, lifts, refrigeration and air conditioning, and renewable/sustainable energy engineering. This includes electricity generation, transmission and distribution.

The Electrotechnology group of skills does not coincide precisely with any of the Australian Bureau of Statistics (ABS) industries defined under the Australian and New Zealand Standard Industrial Classification (ANZSIC). There are several classes (4-digit ANZSIC) where the Electrotechnology skills predominate but there are also skilled Electrotechnology workers distributed across almost all industries. The number of electrical and electronic tradespersons (currently about 195,000) is forecast[1] to increase slightly to around 200,000 over the period to 2011-12. The other main occupational group covered is electrical and electronic associate professionals, with around 23,000 persons currently employed.

The industry sector that covers the largest group of electrical and electronic workers is the 'Installation trade services' (ANZSIC 423) group within the major industry division of construction. Additionally, a significant number of Electrotechnology workers are employed in the Telecommunications industry.

Most vocations in this group have an entry level of skill commensurate with an AQF Certificate III or higher qualification. In some instances relevant experience is required in addition to a formal qualification. A large body of the skills and knowledge detailed in the competencies within this Training Package generally reside within the family of Electrotechnology vocations classified and grouped as occupations under ASCO (Australian Standards Classification of Occupation Code) by the Australian Bureau of Statistics (ABS).

Typical groups represented are, as follows:

- 2125 Electrical and Electronics Engineers
- 2128-15 Electrical or Electronics Engineering Technologist
- 2231 Computing Professionals
- 3123 Electrical Engineering Associate Professionals
- 3124 Electronic Engineering Associate Professionals
- 3294 Computing Support Technicians
- 4311 Electricians
- 4312 Refrigeration and Air-conditioning Mechanics
- 4313 Electrical Distribution Tradespersons
- 4314 Electronic Instrument Tradespersons
- 4315 Electronic and Office Equipment Tradespersons
- 4316 Communications Tradespersons

[1] Employment forecasts used in this document have been produced by Monash University Centre of Policy Studies

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- 4992-17 Broadcast Transmitter Operator
- 9212 Product Assemblers
- 9918 Electrical and Telecommunications Trades Assistants

The skills and knowledge contained within the Electrotechnology Training Package competencies are diverse and pervade many areas, when analysed in terms of the Australian and New Zealand Standard Industrial Classifications (ANZSIC). In particular it embraces the following ANZSIC divisions:

- B Mining
- C Manufacturing
- D Electricity, Gas and Water Supply
- E Construction
- J Communication Services

In particular it is represented in the following specific ANZSIC codes:

- 3610 Electricity Supply
- 4122 Non Building Construction
- 4232 Electrical Services
- 4233 Air Conditioning and Heating Services
- 4234 Fire and Security Systems Services
- 4615 Electrical and Electronic Equipment Wholesaling
- 5261 Household Equipment Repair (Electrical)
- 7823 Consultant Engineering Services

The Electrotechnology Training Package describes the skills and knowledge relevant to many vocations within the broad field of Electrotechnology, rather than those of a particular industry or sector of industry. The Training Package offers a range of qualifications set out in competency standard units. The qualification are achieved through appropriate training of organisations and personnel seeking formal recognition of respective skills and knowledge. The prime objective of the Electrotechnology Training Package is to establish the standards of performance in terms of skills and knowledge required for safe, productive and satisfying work covering a range of work activities.

It is recognised that other training pathways may exist in the form of other Training Packages and arrangements.

RTOs can develop appropriate industry, approved, training programs to meet the objectives of this or other Training Packages. Organisations and personnel seeking formal recognition have a choice of Training Package and of provider/RTO. New apprenticeships which apply choice in relation to funding to RTOs will be facilitated by policy enunciated by State and Territory Training Authorities.

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Regulatory Arrangements

The Electrotechnology Industry is subject to a high level of legislation, regulation, codes of practice, guidelines and advisory standards, related to the research, assembly, installation, construction, diagnoses, maintenance, commissioning, programming, testing or repair of networks, systems, circuits, equipment, components, appliances, facilities in the field of electricity and communications. The regulatory requirements are typically based on the principle of operation of wiring systems and associated circuits involving equipment, apparatus and systems, public safety, safety and health of individuals who work on lines/circuits, systems and apparatus/equipment and other codes and practices related to the environment in which they are installed, operate and are maintained.

Where possible, relevant and current regulatory requirements have been incorporated into this Training Package to assure outcomes are complementary to regulation. Where regulatory requirements are amended or introduced, such outcomes are to be incorporated in training and assessment delivery. Continuous improvement and maintenance arrangements included in this Training Package are designed to keep pace with changes.

Statutes, Regulations and Codes of Practice

The Electrotechnology Industry is covered by Federal, State and Territory Electricity, Telecommunications, Occupational Health and Safety and Work Cover Acts and Regulations, as well as other statutes, regulations, industrial instruments, codes of practice, guidelines and advisory standards, Australian/New Zealand and International Standards.

Information relevant to the Electrotechnology Industry can be found in the following Internet sites:

www.fed.gov.au	www.standards.org.au
www.nsw.gov.au	www.erac.gov.au/
www.qld.gov.au	http://www.acma.gov.au
www.sa.gov.au	http://www.dewr.gov.au/
www.nt.gov.au	http://www.ascc.gov.au/
www.act.gov.au	http://www.workplace.gov.au/tra
www.wa.gov.au	http://www.dest.gov.au/
www.tas.gov.au	http://training.com.au/

Other Industry Standards

It is recognised that the Electrotechnology Standards do not cover all the competencies, likely to be required and applied within Electrotechnology Industry workplaces. Nationally endorsed competency standards from other industries will be used where appropriate and the concept of cross-industry disciplinary standards will be encouraged.

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Specific rules have been included within this Training Package to address these arrangements.

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Overview of Training Packages

What is a Training Package?

A Training Package is an integrated set of nationally endorsed competency standards, assessment guidelines and Australian Qualifications Framework (AQF) qualifications for a specific industry, industry sector or enterprise.

Each Training Package:

- provides a consistent and reliable set of components for recognised performance and determining training, recognising and assessing people's skills, and may also have optional support materials
- enables nationally recognised qualifications to be awarded through assessment against given industry competency standard units
- encourages the development and delivery of flexible training and assessment which suits individual and industry requirements
- encourages learning and assessment in a work-related environment which leads to verifiable industry outcomes.

How do Training Packages fit within the National Training Framework?

The National Training Framework is made up of the nationally agreed quality arrangements for the vocational education and training sector, the Australian Quality Training Framework (AQTF), and Training Package(s) which contain the vocational standards for industry, endorsed by the National Quality Council (NQC).

How are Training Packages developed?

Training Packages are developed by Industry Skills Councils to meet the identified training needs of specific industries or industry sectors. To gain national endorsement of a Training Package, developers must provide evidence of extensive research, consultation and support within the industry area.

How do Training Packages encourage flexibility?

Training Packages describe the skills and knowledge needed to perform effectively in the workplace without prescribing how people should be trained.

Training Packages acknowledge that people can achieve vocational competency in many ways by emphasising what the learner can do, not how or where they learned to do it. For example some experienced workers might be able to demonstrate competency against the competency standard units and even gain a qualification without completing a formal training program.

Training Package assessment and training may be conducted at the workplace, off-the-job, at a training organisation, during regular work, or through work experience, work placement, work simulation or any combination of these.

Who can deliver and assess using Training Packages?

Training and assessment using Training Packages must be conducted by a Registered Training Organisation (RTO) that has the qualifications or specific competency standard units/units of competency on its scope of registration, or that works in partnership with another RTO as specified in the AQTF Standards for RTOs.

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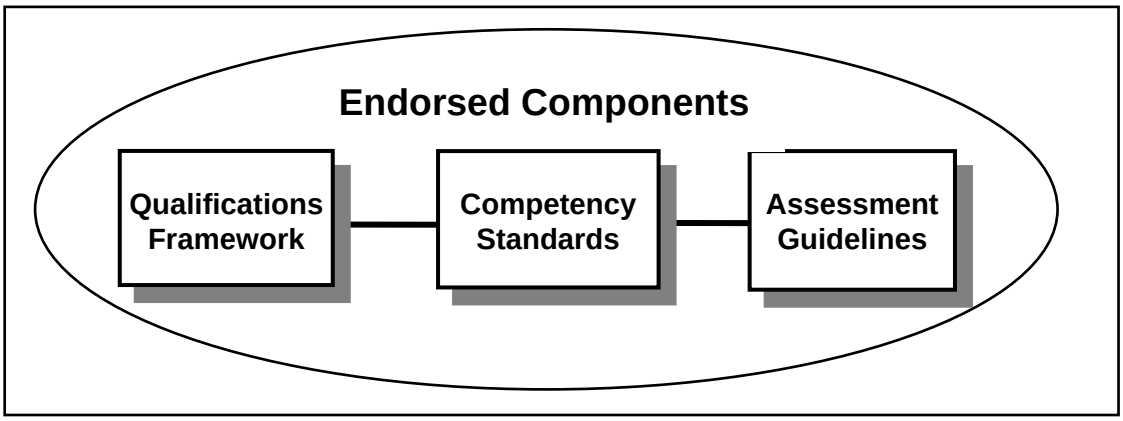
Training Package Endorsed Components

Training Packages are made up of mandatory components endorsed by the NQC and optional support materials.

The nationally endorsed components include the Qualification Framework, Competency Standards and Assessment Guidelines. These form the basis of training and assessment in the Training Package and, as such, they must be used.

Training Package Components



Qualifications Framework

Each Training Package provides details of those competency standards that must be achieved to award AQF qualifications or Statements of Attainment for part thereof a qualification. The rules around which competency standard units can be combined to make up a valid AQF qualification in the Training Package are referred to as "package rules". The packaging rules must be followed to ensure the integrity of validating recognised qualifications issued.

Competency Standards

Each competency standard unit/unit of competency identifies a discrete workplace requirement and includes the knowledge and skills that underpin competency as well as language, literacy and numeracy and occupational health and safety requirements. The competency standard units must be adhered to in training and assessment to ensure consistency of outcomes.

Assessment Guidelines

The Assessment Guidelines provide an industry framework to ensure all assessment outcomes meet industry needs and the nationally agreed standards as expressed in the Training Package and the AQTF Standards for RTOs. The Assessment Guidelines must be followed to ensure the integrity of assessment leading to nationally recognised qualifications.

Training Package Support Materials

The endorsed components of a Training Package are complemented and supported by optional support materials that provide for choice in the design of training and assessment to meet the needs of industry, RTOs and learners. In some instances the

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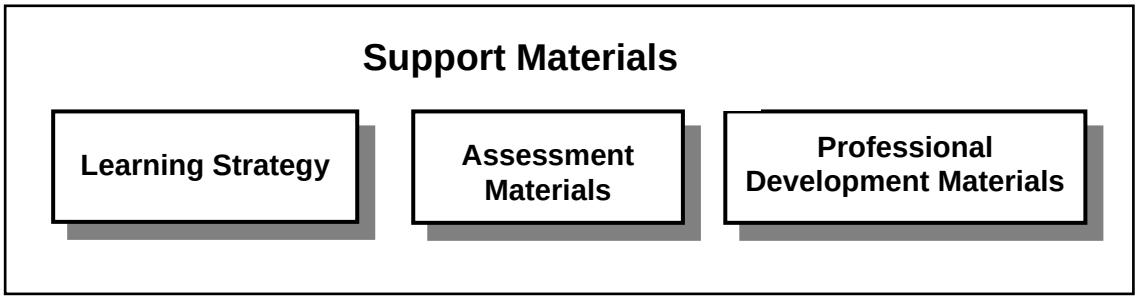
Industry Skills Council may have developed a Training Package and industry support material to assist RTOs in delivering the preferred industry approach. These support materials should be considered by RTOs in accordance with the relevant AQTF standard in an effort to support increased national consistency and assure industry of the quality of outcomes.

Training Package support materials can relate to single or multiple competency standard units , an industry sector, a qualification or the whole Training Package. They tend to fall into one or more of the categories as defined in the paragraph to follow.



A range of stakeholders can produce Training Package support materials. However, to ensure national consistency, partnership or collaborative approaches are preferred. Support materials developers include Industry Skills Councils, RTOs, individual trainers and assessors, private and commercial developers and Government agencies.

Where such materials have been quality assured through a process of 'noting' by the NQC, they display the following official logo. Noted support materials are listed on the National Training Information Service (NTIS), together with a detailed description and information on the type of product and its availability (www.ntis.gov.au).

It is not compulsory to submit support materials for noting, any resources that meet the requirements of the Training Package can be used.

Titles and Codes

There are agreed conventions for both the titling of Training Packages and for the National Codes used in Training Packages and their components. Always use the correct titles and codes, exactly as they appear in the Training Package, and with the title always following the code.

Training Package Codes

Each Training Package has a unique five-character national code assigned when the Training Package is endorsed, for example UEE06. The first three characters are letters identifying the Training Package coverage and the last two characters are numbers identifying the year of endorsement.

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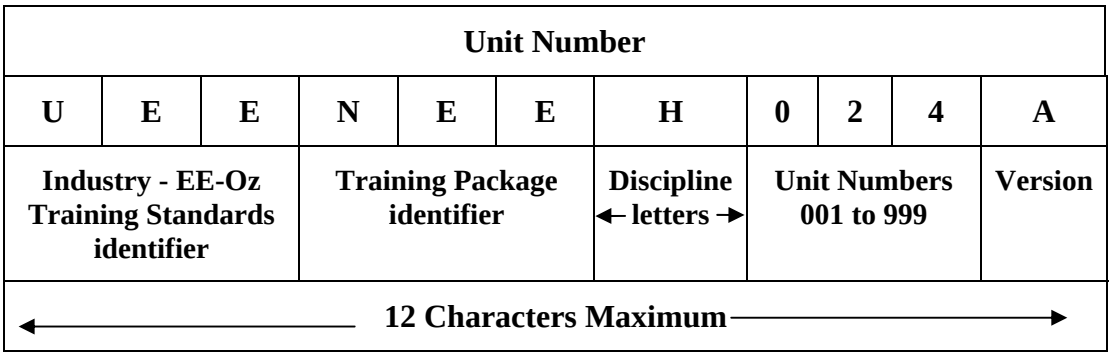
Qualification Codes

Each Training Package qualification has a unique eight-character code, for example in this Training Package UEE30106. In qualification codes, the:

- first three characters are letters identifying the Training Package
- fourth is a number reflecting the AQF level for the qualification
- fifth and sixth characters represent the number of the qualification for the given level. That is in the case of UEE30106, it is the first qualification of currently nineteen AQF 3 qualifications on offer in the Training Package.
- seventh and eighth numbers identify the year in which the qualification was endorsed. Any subsequent amendments to the qualification result in this number changing to reflect the new year of endorsement.

Competency Standard Unit Codes

Each Competency Standard Unit has a unique code. A typical code is made up of a maximum of 12 characters; normally a mixture of uppercase letters and numbers. For example in this Training Package the following approach has been adopted:



Where an amendment is made to a competency standard unit the following applies:

- where changes do not affect the outcome of the unit the last character alpha identifier is incremented to indicate the new version. For example, UEENEEE001**A** is changed to UEENEEE001**B**.
- where changes alter the outcome, a new unit title and code is assigned.

Training Package Titles

The title of each endorsed Training Package is unique and relates to the industry's broad industry coverage. Always use the correct titles, exactly as they appear in the Training Package and with the code always placed before the title.

Qualification Titles

The title of each endorsed Training Package qualification is unique. Qualification titles use the following sequence:

- first, the qualification is identified as either Certificate I, Certificate II, Certificate III, Certificate IV, Diploma or Advanced Diploma
- this is followed by the words 'in' for Certificates I to IV and 'of' for Diploma and Advanced Diploma

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- then the industry descriptor may also follow, for example Electrotechnology, and
- if applicable, the occupational or functional stream follows in brackets, for example (Powerline). For example Certificate III in Electrotechnology Electrician; Diploma of Industrial Electronics and Control Engineering

Competency Standard Unit Titles

Each competency standard unit title is unique. Unit titles describe the competency outcome concisely, and are written in sentence case. For example:

- UEENEEA002A Select electronic components
- UEENEEE007A Use drawings, diagrams, schedules and manuals

The revised Electrotechnology Training Package (UEE06)

The revised Electrotechnology Training Package (UEE06) has been developed, reviewed and validated through extensive industry consultation. It reflects the views of a wide cross-section of the industry and its key stakeholders/practitioners throughout Australia.

Version modification history

The version details of this endorsed Training Package is in the table below. The latest information is at the top of the table.

Version	Release Date	Authorisation	Comments
1	23 Nov 2006	NQC	Primary Release of **Revised** Training Package replacing UTE99

This Training Package for the Electrotechnology Industry (UEE06) has been developed on behalf of the EnergyUtilities Industry and community stakeholders from all States/Territories of Australia by EE-Oz Training Standards, with the support of the Department of Education, Science and Training (DEST). EE-Oz Training Standards operates under a charter from DEST as the recognised Industry Skills Council for the ElectroComms and EnergyUtilities Industry. EnergyUtilities Industry practitioners, regulators, government agencies and community stakeholders contributed much effort, support and knowledge in its development.

The first Electrotechnology Training Package (UTE99) was released in 1999. At that time it broke new ground for setting nationally recognised qualifications comprised of competency standard units as they related to work performance. It assisted in benchmarking the design of training and assessment processes and practices. Since its initial release, it has undergone four version changes.

In its revised form the Electrotechnology Training Package has gone even further in improving currency and relevance to industry by enhancing the range of qualifications and competency standard units available with added flexibility to the industry. It

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includes an array of new and revised competency standard units, pathways and design features.

The previous competency standard units have been revamped, reorganised and updated to nearly 500 new competency standard units across all six vocational education and training levels of the AQF. The result is a Training Package being more relevant to the industry. It readily responds to the needs and responsibilities of the future, both in technology and work organisation.

New skilled career pathways have also been developed that suit employment-based new entrants, as well as the existing workforce or those with pre-existing skill sets.

The Training Package will be able to be used by all those involved in the delivery and assessment of competencies that cover, electronics, electrical, communications including telecommunications – voice, data, video and information technology, computer systems, instrumentation, lifts, refrigeration and air conditioning, and renewable/sustainable energy, fire and security, gaming, rail signals and gaming. This includes:

- State training and recognition authorities who will use the Training Package as:
  - the pre-eminent industry advice to government
  - the minimum requirements to be satisfied by Registered Training Organisations in the delivery of services.
- State/Territory Industry Training Bodies/Industry Skills Councils who will use the Training Package to underpin their relationship with, and support for, the State training and recognition authorities quality systems, including providing advice.
- Registered Training Organisations who will issue qualifications/statements of attainment, based on the requirements outlined in the Training Package which contains the vocational standards for industry.
- Individual candidates/trainees/learners who will use the provisions of the Training Package to establish their responsibilities and to protect their prerogatives.
- Organisations in mapping their human resource processes and arrangements to the National Benchmark competency standard units in the Training Package.

Content of this Training Package

The Training Package is made up of two volumes. Volume 1 covers the overall Package framework and completion requirements for qualifications. Volume 2 includes the content details of parts and sub-sections of Volume 1. The two volumes form an integrated whole and are not to be used independently of each other.

Volume 1 Structure and Overview

Part 1 – Qualification Framework

This section describes how the qualifications, scope/descriptions, composition and content are structured. Completion and issuance requirements are provided as well as advice on flexibility arrangements, with entry and exit pathways and articulation arrangements. Titles and codes of the list of qualifications to be issued are also included.

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Part 2 – Competency standards

This section describes how the competency standards were developed (in broad terms), the industry coverage they apply to, as well as the format and construction of the individual Competency Standard Units. The index of Competency Standard Units and their scope/description is included in this part. Matters related to language, literacy and numeracy, access, equity and cultural diversity and regulatory arrangements, for which the Competency Standard Units may apply, is also included. The Definitions/Glossary and Essential Knowledge and Associated Skills sections of the Training Package link directly to the Competency Standard Units and no Unit is to be used in isolation or exported without these interrelated components.

There are nearly 500 competency standard units included in Volume 2, each listed according to their respective industry discipline area.

Part 3 – Assessment guidelines

This section outlines how the assessment guidelines inform a Registered Training Organisation (RTO) on the infrastructure requirements they will need to enable them to carry out training delivery assessment activities related to the Training Package. The guidelines include assessment systems, the role of RTOs, assessment pathways, recognition arrangements, assessor qualifications and sources of information.

Volume 2 Competency Standard Units – Content and scope

Volume 2 contains the competency standard units in their respective disciplines.

Volume 2 also contains the Essential Knowledge and Associated Skills, a Matrix mapping the essential knowledge and associated skills (EKAS) to the Unit and the Definitions/Glossary section, which provides a description of relevant terms and vocabulary that appear in this Package. Also included are definitions relating to literacy and numeracy skills; Key Competencies and skills enabling employment.

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Layout of this Training Package

Volume 1

Preliminary Information

The Electrotechnology Industry
Overview of Training Packages
The Electrotechnology Industry Training Package

Part 1 Qualifications Framework

Part 2 Competency Standards Overview and Index

Part 3 Assessment Guidelines

Appendix A – New Apprenticeships

Appendix B – Sample Assessment Instruments

Enclosures
- Enclosure A: List of Sample Assessment Instruments
- Enclosure B: Administrative Forms
- Enclosure C: Glossary of Terms

Volume 2

Preliminary Information

Part 1 Definitions/Glossary

Part 2 Competency Standards

2.1 Competency Standard Units

A – Assembly
B – Broadcast
C – Commercial
D – Computer systems
E – Cross discipline
F – Data and voice communications
G – Electrical
H – Electronic
I – Instrument and Control
J – Refrigeration and air conditioning
K – Renewable and sustainable energy
L – Imported
M – Hazardous areas
N – Rail systems
P – Restricted and specialist
R – Research

2.2 Essential Knowledge and Associated Skills (EKAS)

2.2.1 Appendix 1 – Knowledge and Associated Skills Relationship

2.2.2 Appendix 2 – Essential Knowledge and Skills to Unit Matrix

2.3 Literacy and Numeracy Skills

2.4 Key Competencies

2.5 Skills Enabling Employment

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Important Note to Users

Training Packages are dynamic documents. They are amended periodically to reflect the latest industry practices and are version controlled. It is essential that the latest version is always used.

Check the version number before commencing training or assessment.

This Training Package is Version 1 – check whether this is the latest version by going to the National Training Information Service (www.ntis.gov.au) and locating information about the Training Package. Alternatively, contact the Training Package – developer and technical content custodian ElectroComms and EnergyUtilities Industry Skills Council Ltd. trading as EE-Oz Training Standards http://www.eeoz.com.au/ to obtain relevant content advice and confirm the latest version number.

Explanation of the review date

The review date (shown on the title page and in the footer of each page) indicates when the Training Package is expected to be reviewed to meet changes in technologies and other circumstances. The review date is not an expiry date. An endorsed Training Package, and their components, remains current until it is reviewed or replaced.

Explanation of version number conventions

The primary release Training Package is Version 1. When changes are made to a Training Package, sometimes the version number is changed and sometimes it is not, depending on the extent of the change. When a Training Package is reviewed, it is considered to be a new Training Package for the purposes of version control, and is Version 1. Do not confuse the version number with the Training Package's national code (which remains the same during its period of endorsement).

Note the change of National Code from UTE99 to UEE06 for this Training Package.

AQF qualifications in this Training Package

The Electrotechnology Training Package Qualifications can be achieved by completing the AQF Qualifications (Certificates I – IV, Diploma or Advanced Diploma) or by completing Possible Skill Clusters Competency Standard Units (ie Independent Units).

1. AQF Qualifications

Below is a summary of the eighty (80) AQF qualifications contained in this Training Package (UEE06):

Note: Qualifications in italics have been reserved and will be developed as part of the continuous improvement processes associated with this Training Package.

AQF Code	Certificate I Qualifications
UEE10106	Certificate I in ElectroComms Skills

AQF Code	Certificate II Qualifications

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AQF Code	Certificate II Qualifications
UEE20106	Certificate II in Air-conditioning Split Systems
UEE20206	Certificate II in Business Equipment Servicing
	*Certificate II in Electrotechnology Business Support**
UEE20406	Certificate II in Winding and Assembly
UEE20506	Certificate II in Computer Assembly and Repair
UEE20606	Certificate II in Custom Electronics Assembly and Setup
UEE20706	Certificate II in Data and Voice Communications
	*Certificate II in Electrical Wholesaling**
UEE20906	Certificate II in Electronic Assembly
UEE21005	Certificate II in Fire Alarms Servicing
UEE21106	Certificate II in Gaming Machines Servicing
UEE21206	Certificate II in Antennae Equipment
UEE21306	Certificate II in Remote Area Essential Service
UEE21406	Certificate II in Remote Area Power Supply Maintenance
UEE21506	Certificate II in Renewable Energy
UEE21606	Certificate II in Security Assembly and Setup
UEE21706	Certificate II in Technical Support
UEE21806	Certificate II in Appliance Servicing – Refrigerants
UEE21906	Certificate II in Electronics
UEE22006	Certificate II in Electrotechnology (Career Start)
UEE22106	Certificate II in Sustainable Energy (Career Start)

AQF Code	Certificate III Qualifications
UEE30106	Certificate III in Business Equipment
UEE30206	Certificate III in Computer Equipment
UEE30306	Certificate III in Custom Electronics Installations
UEE30406	Certificate III in Data and Voice Communications
UEE30506	Certificate III in Appliance Servicing
UEE30606	Certificate III in Electrical Machine Repair

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AQF Code	Certificate III Qualifications
UEE30706	Certificate III in Switchgear and Control Gear
UEE30806	Certificate III in Electrotechnology Electrician
UEE30906	Certificate III in Electronics and Communications
UEE31006	Certificate III in Fire Protection Control
UEE31106	Certificate III in Gaming Electronics
UEE31206	Certificate III in Instrumentation and Control
UEE31306	Certificate III in Refrigeration and Air-Conditioning
UEE31406	Certificate III in Security Equipment
UEE31506	Certificate III in Rail – Communications and Networks
	*Certificate III in Wireless Communications**
UEE31706	Certificate III in Hazardous areas – Electrician
UEE31806	Certificate III in Hazardous areas – Instrumentation
UEE31906	Certificate III in Explosion-protected equipment overhaul

AQF Code	Certificate IV Qualifications
UEE40106	Certificate IV in Computer Systems
UEE40206	Certificate IV in Electrical – Data and Voice Communications
UEE40306	Certificate IV in Electrical Installation Inspection and Audits
UEE40406	Certificate IV in Electrical – Instrumentation
UEE40506	Certificate IV in Electrical – Air-Conditioning Systems
UEE40606	Certificate IV in Electrotechnology – Systems Electrician
UEE40706	Certificate IV in Electronics and Communications
UEE40806	Certificate IV in Electrical – Fire Protection Control Systems
UEE40906	Certificate IV in Industrial Electronics and Control
UEE41006	Certificate IV in Energy Management and Control
UEE41106	Certificate IV in Electrical – Lift Systems
UEE41206	Certificate IV in Electrical – Rail Signalling
UEE41306	Certificate IV in Refrigeration and Air-Conditioning Servicing
UEE41406	Certificate IV in Refrigeration and Air-Conditioning Systems

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AQF Code	Certificate IV Qualifications
UEE41506	Certificate IV in Video and Audio Systems
UEE41606	Certificate IV in Renewable Energy
UEE41706	Certificate IV in Rail – Communications and Network Systems
UEE41806	Certificate IV in Hazardous areas

AQF Code	Diploma Qualifications
UEE50106	Diploma of Computer Systems Engineering
UEE50206	Diploma of Electrical and Instrumentation
UEE50306	Diploma of Electrical and Refrigeration and Air-Conditioning
UEE50406	Diploma of Electrical Engineering
UEE50506	Diploma of Electronics and Communications Engineering
UEE50606	Diploma of Refrigeration and Air-Conditioning Engineering
UEE50706	Diploma of Renewable Energy Engineering
UEE50806	Diploma of Research and Development
UEE50906	Diploma of Industrial Electronics and Control Engineering

AQF Code	Advanced Diploma Qualifications
UEE60106	Advanced Diploma of Electrical Engineering
UEE60206	Advanced Diploma of Electronics and Communications Engineering
UEE60306	Advanced Diploma of Electrical/Electronic – Technology
UEE60406	Advanced Diploma of Computer Systems Engineering
UEE60506	Advanced Diploma of Computer Systems – Technology
UEE60606	Advanced Diploma of Industrial Electronics and Control Engineering
UEE60706	Advanced Diploma of Refrigeration and Air-Conditioning Engineering
UEE60806	Advanced Diploma of Refrigeration and Air-Conditioning – Technology
UEE60906	Advanced Diploma of Renewable Energy Engineering
UEE61006	Advanced Diploma of Renewable Energy – Technology

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AQF Code	Advanced Diploma Qualifications
UEE61106	Advanced Diploma of Automated Systems Maintenance Engineering
UEE61206	Advanced Diploma of Engineering – Explosion protection

** To be developed as part of continuous improvement*

2. Possible Skill Clusters CSUs (Independent Units)

Additionally, a list of competency standard units that meet regulatory or specialist requirements recognised by Statements of Attainment has been included to support possible skill cluster outcomes. These outcomes generally support requirements associated with regulatory, safety or specialised/hazardous functions of work.

Mapping Qualifications in this Training Package to the former

A table mapping this Training Package to the former Electrotechnology Training Package (UTE99) has been included to assist in linking previous units to new units and to assist in minimising any translation issues that may arise.

This information is detailed in Volume 1 Part 1 – Qualifications Framework, Table 1.

Relationship of CSUs to former Training Package and prerequisites

Included in this Training Package is a summary of:

- Competency Standard Units in the Electrotechnology Training Package
- the relationship of new Units to former competency standard units
- AQF alignment and weighting points of each competency standard unit
- prerequisite requirements.

This information is contained in Volume 1 Part 2 – Competency Standards, Table 2.

List of Imported Competency Standard Units

Included in this Training Package is a list of competency standard units imported from other endorsed Training Packages into the Electrotechnology Training Package. This advice is detailed in Volume 1 Part 2 – Competency Standards, Table 3.

Language, Literacy, Numeracy and Key Competencies

The Competency Standards have been written to reflect the technical and operational needs of industry and include appropriate language and literacy requirements. A new and specific section related to literacy and numeracy skills has been included in the competency standard units for the purposes of providing advice to RTOs on the entry requirements for each unit. It characterises how participants are to be best equipped to achieve the respective unit, in terms of reading, writing and numeracy skill levels.

A specific section for Key Competencies and Skills Enabling Employment has been included in Volume 2 of this Training Package. There is an explanation of their relationship to the Performance Criteria. They are assessed in accordance with the critical aspects of evidence within each Competency Standard Unit.

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Access, Equity and Cultural Diversity

The skills required of employees in the Electrotechnology Industry are comprehensive and are relevant to many different employment situations. The Competency Standards reflect the range of knowledge and skills and their application, required in the Industry. They are written in a non-exclusive manner so as to increase the participation rates of under-represented groups and to minimise unintentional bias.

As a matter of policy, in the Electrotechnology Industry and in this Training Package, there is no exclusion of any persons from participating in competency development, training and employment. This includes encouraging under-represented groups such as indigenous peoples, people with disabilities, women, and people from rural and remote areas or cultural diversity to join the Industry.

Responsibility for Training Package Maintenance

The Training Package for the Electrotechnology Industry is managed and maintained by the National Electrotechnology Competency Advisory Council (NECAC) supported by technical committees comprised of the National Electrotechnology Training Advisory Group (NETAG) and specific discipline Technical Advisory Committees (TACs). The composition of the committees is determined by the Electrotechnology Sector Council of EE-Oz Training Standards under declared protocols.

NECAC and its sub-technical committees is a standing working group of the ElectroComms and Energy Utilities Industry Skills Council Ltd trading as EE-Oz Training Standards, a DEST declared Industry Skills Council (ISC). The Group is representative of the Electrotechnology industry, regulators, and related stakeholders. It includes Registered Training Organisations (RTOs) from around Australia and is also represented by employers and unions, making it bipartite. EE-Oz Training Standards Board and Sector Council determine its composition. The Board and Sector Council may vary its membership from time to time.

The charter of the NECAC is to monitor, review and maintain the Electrotechnology Training Package. This Charter encompasses the following responsibilities:

- *Maintenance of Competency Standards* – to initiate and respond to the need to review, vary, delete and add to the Electrotechnology competency standard units, as part of the sector's standards inventory
- *Maintenance of Competency Delivery Processes* – to monitor the effectiveness of the delivery of competency and so initiate and respond to issues, which may impact on those processes
- *Maintenance of Assessment Guidelines* – to monitor the effectiveness of the Assessment Guidelines and supporting systems; to initiate and respond to issues which impact, or are likely to impact, on the quality of the assessment systems; and to promote quality improvements throughout the system
- *Maintenance of the Qualifications and Recognition Systems* – to monitor the effectiveness of the application of the Qualification and Recognition Systems contained in the Training Package which contains the vocational standards for industry; and to review/revise the system as required

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- *Validation of imported Competency Standard Units* – to monitor the effectiveness and value of imported units for the purpose of their inclusion in the Training Package qualifications framework.

The NECAC meets at least annually to review and plan the Industry maintenance and management processes related to the Training Package. The majority of the considerations by the Group will require prompt response and, therefore, business and decisions will normally be handled by electronic mail. Support for the NECAC and its technical sub-committees will be provided by the EE-Oz Training Standards, who will act as secretariat.

The NECAC is an integral part of the Electrotechnology Industry and EE-Oz Training Standards Electrotechnology Sector Council consultative mechanisms.

Current Membership of the National Steering Group

Name	Title	Organisation
Peter Tighe	Chair	EE-Oz Training Standards
Peter Glynn	Chief Executive Officer	National Electrical and Communications Association (National)
John Ingram	Assistant National Secretary	Communications, Electrical and Plumbing Association (National)
Maurice Graham	Chief Executive Officer	VICTECH (Group Training/Private Provider)
James Tinslay	Executive Director	National Electrical and Communications Association (State)
John Karsznia	Network Representative	Electrotechnology Industry Training Advisory Board (Small State)
Ian Neeson	Educational Representative	Technical Consultant
George Adda	Vocational Education and Training Systems Representative	Box Hill Institute (Education)
Jenny Callagham		National Electrical and Communication Association(Teledata)
Barry Dawson		National Electrical and Communications Association (Group Training)

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Bernie Riordon		Union (Electrical)
Ian Mcarthy		Communication, Electrical and Plumbing Union (Communications)
Kevin Fothergill		Telecommunications and Information Technology Advisory Board
Bob Paton		Manufacturing, Engineering and Related Services Industry Training Advisory Board
Christina Zey		Lift Skills Australia
Norm Cahill		Electrotechnology Industry Training Advisory Board (Large State)
John Karznia		Electrotechnology Industry Training Advisory Board (Small State)
Mike Frew		NSW Tertiary and Further Education
Warren Miller		Standards Australia
Wolfgang Marshall		Electrotechnology Industry Training Organisation (New Zealand)
Jackie Marks		State/Territories Training Authorities
P J Fleming		National Occupation Health and safety Commission (NOHSC)
Steve Griffiths		Small Business
Neville Palmer		Medium Business
Peter Smith		Large Business
Bob Taylor		Utilities and Light Manufacturing Industry Training Board (Consultant)
Darrel Hills		Technical Consultant

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Ian Graham	Regulators Representative	Chair of ERAC
Tony Palladino	Chief Executive Officer	EE-Oz Training Standards
Industry Officers	Observers	DEST
Additional technical representatives were called upon as required		

Acknowledgments

The Board of Directors of the ElectroComms and Energy Utilities Industry Skills Council Ltd trading as EE-Oz Training Standards wishes to acknowledge the important developmental roles played by training advisory and delivery organisations, enterprises, employer and employee representatives, industry practitioners, regulatory authorities, individuals and community stakeholders. Without their level of commitment and support this Training Package would not exist in its current form. The Board acknowledges and thanks the following organisations and individuals:

- National Electrotechnology Sector Council of the EE-Oz Training Standards Board
- The National Electrotechnology Competency Advisory Council (NECAC)
- The National Electrotechnology Training Advisory Group (NETAG) members
- The Chairs of the discipline Training Advisory Committees (TACs) – electrical and data; refrigeration and air conditioning; instrumentation; and electronics and computer systems
- The Chairs, Executive Officers, and Members of the State and Territory Utilities and Electrotechnology Network ITABs and their various sub-committees
- The joint EE-Oz Training Standards/Standards Electrical Equipment in Hazardous Areas Competency Advisory Panel (P12) Australia
- The Electrical Regulatory Advisory Council (ERAC)
- the Australian Communications Authority and the Australian Communications Industry Forum (ACIC)
- The State and Territory Training Authorities
- The State and Territory Regulatory Authorities
- OHS Skills Development and Practical Guidance Team of the National Occupational Health and Safety Commission
- Industry sector registered training organisations and practitioners for contributing to and being supportive of the project
- Industry sector practitioners for contributing to and being supportive of the project.

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ELECTROTECHNOLOGY TRAINING PACKAGE

UEE06

Volume 1 – Part 1
Qualifications Framework

Volume 1 of 2

Electrotechnology Training Package UEE06 – Version Number 1. Review Date 31 Dec 2008

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Volume 1 Part 1 – Qualifications Framework

1.1.1 The Electrotechnology Industry Qualifications Framework

The Electrotechnology Training Package Qualifications Framework provides two outcomes; 1) Qualifications and 2) Possible Skill Clusters competency standard units.

The qualifications listed in this Training Package adhere to the advice provided in the *AQF Implementation Handbook* 3rd Edition 2002. They have been developed by the many and respective sectors of the Electrotechnology Industry in accord with the following principles:

- qualifications must be competency based
- qualifications must be made up by clustering or grouping individual Competency Standard Units
- qualifications must be relevant, in terms of both level and scope, reflecting the realistic vocational needs of the industry
- qualifications must facilitate real career pathways
- qualification structures must not to be designed or intended in order to be misrepresented for other purposes
- qualifications must reflect industry work outcomes and not be influenced by the variety of existing qualifications which may have been used in the past for career progression
- qualifications must be constructed so as to enhance the prospects for consistency, equity of effort, transferability and portability within and across industries.

Competency standards are determined by industry to meet identified industry skill needs. Competency standards are made up of a number of Competency Standard Units (CSUs). These units describe a key function or role in a particular job or occupation. Not every competency standard unit contains all four components of competency, but all four components should be covered by combining a number of group of units.

Research into the Electrotechnology Training Package revealed that many qualified people in the industry seek further skill sets training in only one or two units at any one time, following their primary qualification – not an additional qualification. The previous policy limitation prohibited the declaration of stand-alone Competency Standard Units in their own right. There are occasions when stand-alone or specialist Competency Standard Units are needed by industry for special circumstances and environments. These units do not form a qualification in their own right and cannot always be regarded as an elective or a replacement unit within mainstream qualifications. For instance, the field of Electrical Equipment in Hazardous Areas (EEHA) is a unique environment and often a full qualification is not required. RTOs in this environment are often specialists in discrete areas of EEHA and do not wish to offer full qualifications.

The previous Training Package Development policy limited opportunities for individuals and employers to meet their specialised needs. However, as a result of the High Level Review completed in 2004 recognition was accorded to the inclusion of a separate section in Training Packages, and in relation to this Training Package such as

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has been included under the section of Possible Skill Clusters competency standard units.

The High Level Review findings stated:

"Statements of Attainment

> A set of related competencies below the level of a full qualification can be highly portable and valuable for individuals. The tool for recognising this achievement, the Statement of Attainment, is an important recognition of personal achievement, and is a legitimate credential in its own right, but has no wider community standing or recognition.
>
> We see a need to enhance the market standing of Statements of Attainment by repositioning and promoting them as an important tool for nationally recognising related skill sets below full qualification level and which will be valued by individuals and by industry.
>
> We also see a need to
>
> - review the current systems for reporting the enrolment in and achievement of individual Competency Standard Units to achieve greater clarity for the issuers, recipients and end users of Statements of Attainment, and to
> - clarify and harmonise advice on Statements of Attainment within AQTF documents and the AQF Implementation Handbook."
>
> *Moving on .. Report of the High Level Review of Training Packages, April 2004 (ANTA)"*

A list of Competency Standard Units that meet regulatory or specialist requirements recognised by Statements of Attainment are included to support possible skill cluster outcomes. These outcomes generally support requirements associated with regulatory, safety, or specialised/hazardous functions of work.

Summary of Industry Qualifications

Qualifications in the Electrotechnology Training Package are summarised below. The full range and completion requirements of the qualifications are detailed at the end of this Volume 1 in section 1.9 – Electrotechnology Industry Qualifications Framework

Note: Qualifications in italics have been reserved and will be developed as part of EE-Oz Training Standards continuous improvement processes associated with this Training Package.

List of Electrotechnology qualifications

AQF Code	Certificate I Qualifications
Nil	Reserved – for future development
UEE10106	Certificate I in ElectroComms Skills

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AQF Code	Certificate II Qualifications
UEE20106	Certificate II in Air-conditioning Split Systems
UEE20206	Certificate II in Business Equipment Servicing
	*Certificate II in Electrotechnology Business Support **
UEE20406	Certificate II in Winding and Assembly
UEE20506	Certificate II in Computer Assembly and Repair
UEE20606	Certificate II in Custom Electronics Assembly and Setup
UEE20706	Certificate II in Data and Voice Communications
	*Certificate II in Electrical Wholesaling **
UEE20906	Certificate II in Electronic Assembly
UEE21006	Certificate II in Fire Alarms Servicing
UEE21106	Certificate II in Gaming Machines Servicing
UEE21206	Certificate II in Antennae Equipment
UEE21306	Certificate II in Remote Area Essential Service
UEE21406	Certificate II in Remote Area Power Supply Maintenance
UEE21506	Certificate II in Renewable Energy
UEE21606	Certificate II in Security Assembly and Setup
UEE21706	Certificate II in Technical Support
UEE21806	Certificate II in Appliance Servicing – Refrigerants
UEE21906	Certificate II in Electronics
UEE22006	Certificate II in Electrotechnology (Career Start)
UEE22106	Certificate II in Sustainable Energy (Career Start)

** To be developed as part of continuous improvement*

AQF Code	Certificate III Qualifications
UEE30106	Certificate III in Business Equipment
UEE30206	Certificate III in Computer Equipment
UEE30306	Certificate III in Custom Electronics Installations

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AQF Code	Certificate III Qualifications
UEE30406	Certificate III in Data and Voice Communications
UEE30506	Certificate III in Appliance Servicing
UEE30606	Certificate III in Electrical Machine Repair
UEE30706	Certificate III in Switchgear and Control Gear
UEE30806	Certificate III in Electrotechnology Electrician
UEE30906	Certificate III in Electronics and Communications
UEE31006	Certificate III in Fire Protection Control
UEE31106	Certificate III in Gaming Electronics
UEE31206	Certificate III in Instrumentation and Control
UEE31306	Certificate III in Refrigeration and Air-conditioning
UEE31406	Certificate III in Security Equipment
UEE31506	Certificate III in Rail – Communications and Networks
	Certificate III in Wireless Communications *
UEE31706	Certificate III in Hazardous areas – Electrician
UEE31806	Certificate III in Hazardous areas – Instrumentation
UEE31906	Certificate III in Explosion-protected equipment overhaul

AQF Code	Certificate IV Qualifications
UEE40106	Certificate IV in Computer Systems
UEE40206	Certificate IV in Electrical – Data and Voice Communications
UEE40306	Certificate IV in Electrical Installation Inspection and Audits
UEE40406	Certificate IV in Electrical – Instrumentation
UEE40506	Certificate IV in Electrical – Air-conditioning Systems
UEE40606	Certificate IV in Electrotechnology – Systems Electrician
UEE40706	Certificate IV in Electronics and Communications
UEE40806	Certificate IV in Electrical – Fire Protection Control Systems
UEE40906	Certificate IV in Industrial Electronics and Control

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AQF Code	Certificate IV Qualifications
UEE41006	Certificate IV in Energy Management and Control
UEE41106	Certificate IV in Electrical – Lift Systems
UEE41206	Certificate IV in Electrical – Rail Signalling
UEE41306	Certificate IV in Refrigeration and Air-conditioning Servicing
UEE41406	Certificate IV in Refrigeration and Air-conditioning Systems
UEE41506	Certificate IV in Video and Audio Systems
UEE41606	Certificate IV in Renewable Energy
UEE41706	Certificate IV in Rail – Communications and Network Systems
UEE41806	Certificate IV in Hazardous areas

AQF Code	Diploma Qualification
UEE50106	Diploma of Computer Systems Engineering
UEE50206	Diploma of Electrical and Instrumentation
UEE50306	Diploma of Electrical and Refrigeration and Air-conditioning
UEE50406	Diploma of Electrical Engineering
UEE50506	Diploma of Electronics and Communications Engineering
UEE50606	Diploma of Refrigeration and Air-conditioning Engineering
UEE50706	Diploma of Renewable Energy Engineering
UEE50806	Diploma of Research and Development
UEE50906	Diploma of Industrial Electronics and Control Engineering

AQF Code	Advanced Diploma Qualification
UEE60106	Advanced Diploma of Electrical Engineering
UEE60206	Advanced Diploma of Electronics and Communications Engineering
UEE60306	Advanced Diploma of Electrical/Electronic – Technology
UEE60406	Advanced Diploma of Computer Systems Engineering
UEE60506	Advanced Diploma of Computer Systems – Technology

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AQF Code	Advanced Diploma Qualification
UEE60606	Advanced Diploma of Industrial Electronics and Control Engineering
UEE60706	Advanced Diploma of Refrigeration and Air-conditioning Engineering
UEE6080	Advanced Diploma of Refrigeration and Air-conditioning – Technology
UEE60906	Advanced Diploma of Renewable Energy Engineering
UEE61006	Advanced Diploma of Renewable Energy – Technology
UEE61106	Advanced Diploma of Automated Systems Maintenance Engineering
UEE61206	Advanced Diploma of Engineering – Explosion protection

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Table 1 Qualifications Mapping of this Training Package to the former

Detailed below is a summary qualifications mapping of the former Electrotechnology Training Package (UTE99) to the new Electrotechnology Training Package (UEE06).

Mapping of this Training Package to the former

AQF Code	Certificate I Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE10106	Certificate I in ElectroComms Skills	New	Not applicable
Nil	Reserved – for future development (refer to CII – UEE22006)	Certificate I in Electrotechnology UTE 1 01 02	Not applicable
	(refer to CII – UEE22106)	Certificate I in Sustainable Energy (Electrotechnology) UTE10202	Not applicable

AQF Code	Certificate II Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE20106	Certificate II in Air-conditioning Split Systems	New	
UEE20206	Certificate II in Business Equipment Servicing	Certificate II in Electrotechnology Servicing UTE20504	Full – with requisite specialisations
	Certificate II in Electrotechnology Business Support	Certificate II in Electrotechnology Business Support UTE20199	

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AQF Code	Certificate II Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE20406	Certificate II in Winding and Assembly	Certificate II in Electrotechnology Servicing UTE20504	Full – with requisite specialisations
UEE20506	Certificate II in Computer Assembly and Repair	Certificate II in Electrotechnology Servicing UTE20504	Full – with requisite specialisations
UEE20606	Certificate II in Custom Electronics Assembly and Setup	New	
UEE20706	Certificate II in Data and Voice Communications	Certificate II in Electrotechnology Data Communications UTE20299	Full
	Certificate II in Electrical Wholesaling	Certificate II in Electrotechnology Business Support UTE20199	
UEE20906	Certificate II in Electronic Assembly	Certificate II in Electrotechnology Servicing UTE20504	Full – with requisite specialisations
UEE21006	Certificate II in Fire Alarms Servicing	Certificate II in Electrotechnology Servicing UTE20504	Part
UEE21106	Certificate II in Gaming Machines Servicing	New	
UEE21206	Certificate II in Antennae Equipment	Certificate II in Electrotechnology Servicing UTE20504	Full – with requisite specialisations
UEE21306	Certificate II in Remote Area Essential Service	Certificate II in Electrotechnology Remote Area Essential Services Operations UTE20499	Full

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AQF Code	Certificate II Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE21406	Certificate II in Remote Area Power Supply Maintenance	New	
UEE21506	Certificate II in Renewable Energy	Certificate II in Electrotechnology Servicing UTE20504	Full – with requisite specialisations
UEE21606	Certificate II in Security Assembly and Setup	Certificate II in Electrotechnology Servicing UTE20504	Full – with requisite specialisations
UEE21706	Certificate II in Technical Support	Certificate II in Electrotechnology Technical Support UTE20604	Full
UEE21806	Certificate II in Appliance Servicing – Refrigerants	Certificate II in Electrotechnology Servicing UTE20504	Part
UEE21906	Certificate II in Electronics	Certificate II in Electrotechnology Servicing UTE20504	Full – with requisite specialisations
	Transferred to ESI – Transmission, Distribution and Rail Sector (UET06)	Certificate II in Electrotechnology Powerline (Vegetation Control) UTE20399	
UEE22006	Certificate II in Electrotechnology (Career Start)	Certificate I in Electrotechnology UTE10102	Full
UEE22106	Certificate II in Sustainable Energy (Career Start)	Certificate I in Sustainable Energy (Electrotechnology) UTE10202	Full
UEE21706	Certificate II in Technical Support	Certificate II in Lift Systems – Operational Support UTL20198	Part

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AQF Code	Certificate III Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE30106	Certificate III in Business Equipment	Certificate III in Electrotechnology Entertainment and Servicing UTE30702	Full – with requisite specialisations
UEE30206	Certificate III in Computer Equipment	Certificate III in Electrotechnology Computer Systems UTE30599	Full
UEE30306	Certificate III in Custom Electronics Installations	New	
UEE30406	Certificate III in Data and Voice Communications	Certificate III in Electrotechnology Data Communications UTE30699	Full
UEE30506	Certificate III in Appliance Servicing	Certificate III in Electrotechnology Assembly and Servicing UTE30104	Full – with requisite specialisations
UEE30606	Certificate III in Electrical Machine Repair	Certificate III in Electrotechnology Assembly and Servicing UTE30104	Full – with requisite specialisations
UEE30706	Certificate III in Switchgear and Control Gear	Certificate III in Electrotechnology Assembly and Servicing UTE30104	Full – with requisite specialisations
UEE30806	Certificate III in Electrotechnology Electrician	Certificate III in Electrotechnology Systems Electrician UTE31199	Full

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AQF Code	Certificate III Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE30906	Certificate III in Electronics and Communications	Certificate III in Electrotechnology Communications UTE30402 Certificate III in Electrotechnology Scanning UTE31099	Full – with requisite specialisations
UEE31006	Certificate III in Fire Protection Control	New	
UEE31106	Certificate III in Gaming Electronics	New	
UEE31206	Certificate III in Instrumentation and Control	Certificate III in Electrotechnology Instrumentation UTE30899	Full
UEE31306	Certificate III in Refrigeration and Air-conditioning	Certificate III in Electrotechnology Refrigeration and Air Conditioning UTE 3 09 99	Part – does not include greenhouse gas licensing requirements
UEE31406	Certificate III in Security Equipment	New	
UEE31506	Certificate III in Rail – Communications and Networks	New	
	Certificate III in Wireless Communications *	Certificate III in Electrotechnology Entertainment and Servicing UTE30702	
	No longer required. Covered by new qualifications	Certificate III in Electrotechnology Building Services UTE30299	
	No longer required. Covered by other Training Package – Business Services	Certificate III in Electrotechnology Business Administration UTE30399	

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AQF Code	Certificate III Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE31706	Certificate III in Hazardous areas – Electrician	New	
UEE31806	Certificate III in Hazardous areas – Instrumentation	New	
UEE31906	Certificate III in Explosion-protected equipment overhaul	New	
UEE30806	Certificate III in Electrotechnology Electrician	Certificate III in Lift Systems – Electrical UTL30198	Full – with requisite specialisations

AQF Code	Certificate IV Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE40106	Certificate IV in Computer Systems	Certificate IV in Electrotechnology Computer Systems UTE40499	Full
UEE40206	Certificate IV in Electrical – Data and Voice Communications	New	
UEE40306	Certificate IV in Electrical Installation Inspection and Audits	*Certificate IV in Electrotechnology Inspection and Audits UTE40899*	
UEE40406	Certificate IV in Electrical – Instrumentation	New	

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AQF Code	Certificate IV Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE40506	Certificate IV in Electrical – Air-conditioning Systems	New	
UEE40606	Certificate IV in Electrotechnology – Systems Electrician	Certificate IV in Electrotechnology Systems Electrician UTE41202	Full
UEE40706	Certificate IV in Electronics and Communications	Certificate IV in Electrotechnology Communications UTE40302	Full
UEE40806	Certificate IV in Electrical – Fire Protection Control Systems	New	
UEE40906	Certificate IV in Industrial Electronics and Control	Certificate IV in Electrotechnology Apparatus Servicing UTE40199	Full – with requisite specialisations
UEE41006	Certificate IV in Energy Management and Control	*Certificate IV in Electrotechnology Building Services UTE40299*	
UEE41106	Certificate IV in Electrical – Lift Systems	Certificate IV in Lift Systems – Electrical UTL40198	Full
UEE41206	Certificate IV in Electrical – Rail Signalling	New	
UEE41306	Certificate IV in Refrigeration and Air-conditioning Servicing	New	
UEE41406	Certificate IV in Refrigeration and Air-conditioning Systems	Certificate IV in Electrotechnology Refrigeration & Air Conditioning UTE41199	Full

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AQF Code	Certificate IV Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE41506	Certificate IV in Video and Audio Systems	Certificate IV in Electrotechnology Entertainment and Servicing UTE40602 Certificate IV in Electrotechnology Radar Systems UTE41099	Full – with requisite specialisations
UEE41606	Certificate IV in Renewable Energy	Certificate IV in Electrotechnology Renewable Energy UTE41301	Part
UEE41706	Certificate IV in Rail – Communications and Network Systems	New	
		Certificate IV in Electrotechnology Contracting UTE40599	
UEE40706	Certificate IV in Electronics and Communications	Certificate IV in Electrotechnology Entertainment and Servicing UTE40602	Full
UEE41806	Certificate IV in Hazardous areas	Certificate IV in Electrotechnology Explosion-protection UTE40799	Full
UEE40906	Certificate IV in Industrial Electronics and Control	Certificate IV in Electrotechnology Instrumentation UTE40999	Full – with requisite specialisations

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AQF Code	Diploma Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE50106	Diploma of Computer Systems Engineering	Diploma in Computer Systems Engineering UTE50199	Full
UEE50206	Diploma of Electrical and Instrumentation	New	
UEE50306	Diploma of Electrical and Refrigeration and Air-conditioning	New	
UEE50406	Diploma of Electrical Engineering	Diploma in Electrical Engineering UTE50299	Full
UEE50506	Diploma of Electronics and Communications Engineering	Diploma in Electronic Engineering UTE50399	Full
UEE50606	Diploma of Refrigeration and Air-conditioning Engineering	Diploma in Refrigeration and Air Conditioning Engineering UTE50599	Full
UEE50706	Diploma of Renewable Energy Engineering	Diploma in Electrotechnology Renewable Energy UTE50601	Full
UEE50806	Diploma of Research and Development	New	
UEE50906	Diploma of Industrial Electronics and Control Engineering	Diploma in Instrumentation and Control Engineering UTE50499	Full
UEE50406	Diploma of Electrical Engineering	Diploma of Lift Systems (Technician) UTL50198	Part – with requisite specialisations

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AQF Code	Advanced Diploma Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE60106	Advanced Diploma of Electrical Engineering	Advanced Diploma in Electrical Engineering UTE60299	Full
UEE60206	Advanced Diploma of Electronics and Communications Engineering	Advanced Diploma in Electronic Engineering UTE60399	Full
UEE60306	Advanced Diploma of Electrical/Electronic – Technology	New	
UEE60406	Advanced Diploma of Computer Systems Engineering	Advanced Diploma in Computer Systems Engineering UTE60199	Full
UEE60506	Advanced Diploma of Computer Systems – Technology	New	
UEE60606	Advanced Diploma of Industrial Electronics and Control Engineering	Advanced Diploma in Instrumentation and Control Engineering UTE60499	Full
UEE60706	Advanced Diploma of Refrigeration and Air-conditioning Engineering	New	
UEE60806	Advanced Diploma of Refrigeration and Air-conditioning – Technology	New	
UEE60906	Advanced Diploma of Renewable Energy Engineering	New	
UEE61006	Advanced Diploma of Renewable Energy – Technology	New	

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AQF Code	Advanced Diploma Qualifications (UEE06)	Former Training Package (UTE99)	Equivalent – full, part, or no
UEE61106	Advanced Diploma of Automated Systems Maintenance Engineering	New	
UEE61206	Advanced Diploma of Engineering – Explosion protection	New	

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Allied Qualifications

Allied Qualifications relevant to the Electrotechnology Industry that reside in other nationally endorsed Training Packages.

AQF Code	Relates to	Training Package
UEG10106	Certificate I in Utilities Industry Operations	Gas Industry (UEG06)
UET20106	Certificate II in ESI Vegetation Control	ESI – Transmission, Distribution and Rail Sector (UET06)
UET20206	Certificate II in ESI Transmission Line Assembly	ESI – Transmission, Distribution and Rail Sector (UET06)
UET30106	Certificate III in ESI – Transmission (Powerline)	ESI – Transmission, Distribution and Rail Sector (UET06)
UET30206	Certificate III in ESI – Distribution (Powerline)	ESI – Transmission, Distribution and Rail Sector (UET06)
UET30306	Certificate III in ESI – Rail Traction	ESI – Transmission, Distribution and Rail Sector (UET06)
UET30406	Certificate III in ESI – Cable Jointing	ESI – Transmission, Distribution and Rail Sector (UET06)
UET40106	Certificate IV in ESI – Power Systems	ESI – Transmission, Distribution and Rail Sector (UET06)
UET40206	Certificate IV in ESI – Substation	ESI – Transmission, Distribution and Rail Sector (UET06)
UET50106	Diploma of ESI – Power Systems	ESI – Transmission, Distribution and Rail Sector (UET06)
UET60106	Advanced Diploma of ESI – Power Systems	ESI – Transmission, Distribution and Rail Sector (UET06)
UEG20106	Certificate II in Utilities Industries Operations	Gas Industry (UEG06)
UEP40506	Certificate IV in ESI Generation Maintenance (Electrical/Electronic)	ESI Generation Sector (UEP06)
UEP50406	Diploma of ESI Generation (Electrical/Electronic)	ESI Generation Sector (UEP06)

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List of Possible Skill Clusters CSUs

UEENEEA006A	Apply lead-free soldering techniques
UEENEEB001A	Operate and maintain an amateur radio communication station
UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set
UEENEED031A	Develop and validate basic integrated systems
UEENEED032A	Design integrated systems
UEENEED033A	Design complex integrated systems
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE021A	Plan an integrated cabling system
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE029A	Solve electrotechnical problems
UEENEEE030A	Provide solutions to and report on routine electrotechnology problems
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEF001A	Lay and connect cabling for direct access to telecommunication services
UEENEEF002A	Lay and connect cables for multiple access to telecommunication services
UEENEEF004A	Install and modify performance data communication structured cabling
UEENEEF005A	Install and modify performance data communication optical fibre cabling
UEENEEF006A	Solve problems in data and voice communications circuits
UEENEEF012A	Install aerial communication cables
UEENEEF013A	Install below ground communication cables
UEENEEG014A	Develop plans and compliance policies to conduct a contracting business
UEENEEJ068A	Maintain microbial control of air and water systems
UEENEEE006A	Apply methods to maintain currency of industry developments
UEENEEF001A	Lay and connect cabling for direct access to telecommunication services
UEENEEG071A	Install and set up interval metering
UEENEEM001A	Report on the integrity of explosion-protected equipment in hazardous areas
UEENEEM002A	Attend to breakdowns in hazardous areas
UEENEEM003A	Use and maintain the integrity of portable gas detection devices
UEENEEM004A	Install explosion-protected equipment and wiring systems
UEENEEM005A	Install and maintain integrity of fixed gas detection equipment
UEENEEM006A	Maintain equipment in hazardous areas
UEENEEM007A	Overhaul and repair explosion-protected equipment
UEENEEM008A	Assess explosion-protected equipment for compliance with standards
UEENEEM009A	Test installations in hazardous areas
UEENEEM011A	Conduct detailed inspection of hazardous areas installations
UEENEEM012A	Develop and manage maintenance programs for hazardous areas electrical equipment

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UEENEEM013A	Ensure the safety of hazardous areas
UEENEEM014A	Design and develop modifications to explosion-protected equipment
UEENEEM015A	Classify hazardous areas
UEENEEM016A	Design electrical installations in hazardous areas
UEENEEM017A	Design explosion-protected electrical systems
UEENEEM018A	Design gas detection systems
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply
UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply
UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply
UEENEEP004A	Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply
UEENEEP005A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles
UEENEEP006A	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply
UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures
UEENEEP008A	Conduct inservice safety testing of electrical cord assemblies and cord connected equipment

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1.1.2 Qualification Structures

Qualification structures have been developed to satisfy flexibility, quality of outcomes, equity and consistency, while achieving valid alignment with the Australian Qualifications Framework (AQF). This provides a range of purpose-built qualifications at the various AQF levels that align to specific and well recognised workplace outcomes. It also identifies a range of emerging new areas within the Electrotechnology Industry.[1]

Following significant research with key industry stakeholders, regulators, RTOs and industry practitioners, qualification titles were chosen to meet the needs of the market now and into the future. Recommendations followed on how best to structure and determine the completion requirements of a qualification, and a system was introduced which supports flexibility in selecting elective units. The resulting design:

- includes purpose-built qualifications that meet the need of the Industry
- facilitates flexibility by maximising the range of options available within the purpose built qualifications structures
- satisfies quality requirements by ensuring the integrity of the AQF in terms of balance between equity and flexibility within and across competency levels
- takes into account any prevailing regulatory requirements
- achieves consistency of outcomes across the range of qualifications on offer at respective AQF levels.

It was decided to 'cluster' or package the Competency Standard Units in three groups – Core, Stream Core and Elective – aligned to an AQF level. For the Elective group, a Unit Strand Electives system was developed and adopted to facilitate choice. In this system elective units are valued (relative to other units and their work outcomes for the qualification) by placing them in pre-defined levels, known as Strands. The Strand Elective system ensures that characteristics and distinguishing features as defined by the AQF are met for each qualification outcome. It reflects realistic enterprise work outcomes across the respective AQF levels and equity in actual worth, breadth, depth and complexity of performance outcomes.

The structuring, composition and required completion rules for the qualifications were determined with these tenets in mind.

Core *Core Units are compulsory units required for the industry.*

They represent a substantive and/or technical focus part of the overall group of Competency Standard Units that make up the qualification and, its intended outcome. The core units are not valued for the purpose of the qualification completion requirements.

[1] Consideration has been given to the relationship of the Electrotechnology Training Package with the suite of EE-Oz Training Standards EnergyUtilities and other allied Training Packages in ESI – Generation Sector; ESI – Transmission, Distribution and Rail Sector and the Gas Industry, as well as Metals and Engineering; Telecommunications and others.

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Stream Core

Steam Core Units are units required for supporting enterprise outcomes.

They represent those units that provide flexibility related to particular enterprise quality assurance arrangements including administrative matters related to enterprise practices and work outcomes. The stream core units are not valued for the purpose of the qualification completion requirements.

Electives

Elective Units are those units that provide the flexibility required specifically for enterprise work outcomes.

They represent the work context or environment in which the context technical requirements of development are applied. They are included specifically to meet particular work organisation and skill requirements of enterprises and the completion requirements of the qualification. Elective Units are treated as complementary and as key building blocks to enhancing the contextualisation and relevance of outcomes of the Core Units within the qualification. They are included a Schedule of Electives for each AQF level and assigned a Unit Strand Total to facilitate flexibility.

Note: Certain Core Units in one qualification may appear as Elective Units in another and so a Unit Strand Total is assigned to them all.

Each qualification stands alone from other related qualifications. When determining the group of units required for completion, each is treated independently, relative to the chosen qualification.

Contextualisation

The need for contextualising Competency Standard Units is acknowledged, but is acceptable/valid only if:

- no individual Competency Standard Units are varied or contextualised without regard to prevailing legislation in any jurisdiction, regulatory codes of practice, guidelines and advisory standard requirements mandated by a relevant State/Territory electricity or regulatory authority
- all prerequisites are included
- industry or enterprise-developed Competency Standard Units that are added to the elective group of units within the qualification framework:
  - are an allied skills set which is complementary to the core competency standard units
  - do not change the intended vocational outcome or equity of the overall qualification
  - are submitted to the ElectroComms and EnergyUtilities Industry Skills Council Ltd trading as EE-Oz Training Standards for approval and inclusion into this Training Package in accordance with the importation rules and continuous improvement arrangements defined by the National Quality Council.

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Regulatory arrangements

The development of qualifications in this Training Package has taken account the respective requirements of licensing and regulatory authorities which will use a range of qualifications contained in the Package. In constructing the qualifications, due consideration has been given to the link between the issuing of a qualification and the respective licensing/registration. Every effort has been made to ensure currency in regulatory requirements is included and RTOs must ensure these are observed. This includes utilising any recommended industry training program designed to meet the Competency Standard Units and qualification outcome(s) related to licensing/registration applications.

It is expected that the assessment and preferred training regime, which meets the competency outcomes of the qualification, will also meet the regulatory requirements. For instance, the Electrical Regulatory Authorities Council (ERAC) promulgated and released a policy in March 2001 as important advice to both RTOs as well as to apprentice electricians to ensure that persons being trained and assessed as electricians have met national licensing requirements.

The ERAC policy required that where a Training Program is recommended by the industry, it shall be delivered by an RTO. The policy stated that, "*Failure by an RTO to provide evidence (to the satisfaction of the relevant licensing authority) that the training (including assessment) delivered to a licence applicant satisfies the stated requirements and forms an integral part of an approved Training Package*[2] *qualification, which means the applicant has successfully passed a* 'electrical safety assessment' *in accordance with specified requirements, will result in the applicant being required to undertake further assessments at the discretion of the licensing authority."*

It must be remembered that an RTO registered under the Australian Quality Training Framework (AQTF) requirements is given full responsibility for deeming a learner/apprentice competent for the respective Competency Standard Units making up a Training Package qualification. Where the learner/apprentice is deemed competent and is to be issued the qualification/statement for the competency standard units, the RTO must also provide all the necessary documentation required by the regulatory authority to support an application of eligibility.

Where licensing/registration applies, RTOs are to ensure that assessment is consistent with licensing/registration requirements (refer Assessment Guidelines).

Flexibility – Schedules of Electives

The Qualification Framework Structures provide maximum flexibility permissible within the regulated context of the Industry and for all parties using the qualifications. It includes a range of imported units.

The qualifications have been structured to meet the needs of the industry and enhance flexibility for enterprise outcomes. Particular regard has been given to allowing sufficient access for all employers and their employees.

The qualifications contain a core and stream core requirement supplemented by a broad range of electives, broad enough to reflect and respond to diverse approaches to work

[2] Approved Training Package means a National Quality Council (NQC) endorsed Training Package qualification, that includes the 'electrical safety assessment' as approved by ERAC/NUELAC, within the respective industry's Training Program where recommended (ERAC Policy released 1st July 2001).

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requirements and organisation needs. A wide range of elective Competency Standard Units are distributed across a selection of discipline areas.

A process to facilitate flexibility in the choice of electives has been developed. Units are placed in Schedules that are aligned to an AQF level. Each qualification references the respective Schedule and advises as to the unit strand total required for completion. In this way many qualifications of the same AQF level can access a common bank and defined group of electives. Within each schedule, respective units have been placed into ***STRANDS*** to facilitate work outcomes for the qualification, as specified by industry stakeholders.

1.1.3 Valuation of Competency Standard Units

Competency Standard Units – Valuation processes and procedures

'*The 'size" of a Competency standard unit is a reflection of the complexity of skills and knowledge incorporated, or the range of activities undertaken, which may vary*'. (*Training Package Developer's Handbook* Part 2 Section 1)

To ensure optimisation of flexibility and equity of the AQF vocational outcomes across qualifications and to maintain the integrity of the Core AQF alignment within the qualification, values for each of the elective unit(s) have been attributed relative to the Core units. The greater the breadth and complexity the higher the relative weighting.

Each Elective Unit is assigned a strand value that reflects its level of content, breadth, complexity, autonomy, context, and comparative effort of application related to work performance, relative to the Core Units of the qualification level sought within the Electrotechnology Industry. Subsequently, it is incorporated into a relevant Schedule of Electives with a predetermined schedule of electives unit strand total. For each AQF level there is one Schedule of Electives from which the electives are selected.

The completion guidelines for the Elective units (unit strand totals) are based on an industry-developed competency standard valuing system which takes into account the required total of electives required to 'facilitate' the completion of a qualification. The strands (specified by industry stakeholders) are used to facilitate and reflect the range of work outcomes applied in the industry for the qualification.

The elective units selected for completion of the qualification require relevant prerequisites to be attained and these too may require a 'weighting' relative to the core of the qualification.

The unit valuation process does not provide an absolute solution for all situations, however the relative weighting assigned to elective units has been determined by the industry and coordinated by EE-Oz Training Standards.

Elective Strand Selection

In accordance with the qualification completion requirements, a Unit Strand Total of units can be selected from *up to eight (8) Strands* used within each respective Schedule. Each Schedule then provides further advice as to the options that exist for achieving a variety of outcomes.

The elective units selected for completion of the qualification will require, where applicable, relevant prerequisites to also be attained and these too may require recognition relative to the core of the qualification.

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Below is an example of how elective units can be selected from the respective Schedule of Electives and relevant Strands.

Certificate III in Data and Voice Communications – UEE30406

Core Competency Standard Units	Must do all CSUs listed
Stream Core Competency Standard Units	Must do at least the required number of CSUs from a given selection
Elective CSU selection:	Must achieve a minimum Unit Strand Total (UST) of 11 for this qualification.
The unit strand total required for each qualification appears in the qualifications structures, at 1.11.2. For example for UEE30905 Certificate III in Electronics and Communications a minimum of 11 is required. Alternatively the minimum UST can be found at section 1.5.2 Qualification completion unit strand totals.	**Important:** The qualification references Schedule 3 of the Schedule of Electives and is to be used for selecting electives. Schedule 3 is aligned to AQF3 and forms an integral part of the qualification structure. Units are selected as required to meet workplace outcomes using one Strand or several or a combination of strands to achieve a total of 11 as per below.

Note:
1. Prerequisite pathways are to be identified and met for all elective units selected.

2. In selecting elective units consideration is to be given to career planning advice such that they form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

Selecting Elective units using the Unit Strand Total (UST) requirement

UST required for qualification completion = at least 11	**Can use the following combinations from Schedule 3 Electives to achieve the outcome.** *That is, by selecting relevant and available units in respective Strands*						**UST**
	UST 6	UST 5	UST 4	UST 3	UST 2	UST 1	
Option 1	1 x Strand 6	1 x Strand 5					11
Option 2		1 x Strand 5	1 x Strand 4		1 x Strand 2		11
Option 3			2 x Strand 4			1 x Strand 3	11
Option 4			2 x Strand 4		1 x Strand 2	1 x Strand 1	11
Option 5				2 x Strand 3	1 x Stand 2	1 x Strand 1	11
Option 6						11 x Strand 1	11
Option 7		1 x Strand 5				6 x Strand 1	11
An array of other combinations can be used provided the sum value of the Unit Strand Total is at least eleven (11).							11

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EXAMPLE SCHEDULE

Schedule of Electives – 3

Competency Standard Units have been put into strands to facilitate work outcomes for the qualification, as specified by industry stakeholders. This design feature has been developed to enhance flexibility for enterprise outcomes.

Strand 6

UEENEEA010A	Assemble, mount and connect switchgear and controlgear
UEENEED012A	Support computers hardware and software

This is only a sample and more Competency Standard Units apply

Strand 5

UEENEEH051A	Install large wired and wireless security systems
UEENEEJ053A	Find and rectify faults in appliance motors and associated controls

This is only a sample and more Competency Standard Units apply

Strand 4

UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH018A	Find and repair faults in electronic apparatus
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply

This is only a sample and more Competency Standard Units apply

Strand 3

UEENEEA012A	Make up and assemble bus bars
UEENEEA013A	Assemble and wire control panels
UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set

This is only a sample and more Competency Standard Units apply

Strand 2

UEENEEA004A	Rework electronic sub assemblies
UEENEEG057A	Conduct electrical tests on low voltage electrical machines
UEENEEG059A	Conduct mechanical tests of electrical machines
UEENEEH024A	Carry out repairs of predictable faults in audio components
UEENEEJ067A	Solve problems in central air conditioning systems
UEENEEJ068A	Maintain microbial control of air and water systems

This is only a sample and more Competency Standard Units apply

Strand 1

UEENEEA002A	Select electronic components
UEENEEE005A	Fix and secure equipment

This is only a sample and more Competency Standard Units apply

Imported units

To further enhance flexibility, the Electrotechnology Training Package has imported a number of nationally endorsed Competency Standard Units from other Training Packages. Many of these have been identified for use in the elective range of the

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qualifications on offer. They have been valued in accordance with the valuation rules determined for this Training Package.

It is important that all parties, especially regulators and users of this Training Package are aware of the need to import new Competency Standard Units to meet new technology, shared/converging technology, specialist or other changing needs. Given the high degree of imported units already included in this Package, it is anticipated that this option is not likely to occur frequently.

The importing process

RTOs and enterprises may submit units for inclusion into the Training Package. Units submitted for importation are processed and valued in accordance with the Training Package requirements.

Where enterprises or RTOs wish to have CSUs included in the elective group of units or in the core of a particular qualification(s), they can do so in accordance with the *Process for importation and valuation* section (below).

Imported units may be:

- those from other industries, which have been nationally endorsed by the National Quality Council (NQC) **and/or**
- those developed at an enterprise or local level and submitted for inclusion in the range of Electrotechnology Industry Competency Standards.

All imported units are to be valued against the same criteria as applied to the Electrotechnology Industry Competency Standards.[3]

1.1.4 Qualifications – Completion requirements framework

Qualifications have been structured to provide an appropriate mix of Competency Standard Units to enhance flexibility while assuring equity of work and quality of outcomes.

The requirements for individuals to complete each qualification are outlined in the Qualification Structure. Each qualification describes the minimum requirement for the issuing of the qualification. Individuals may undertake additional elective units concurrent with or after the completion of the qualification.

Typically the trigger for a qualification contained in the Electrotechnology Industry Qualifications Structure requires selection and completion of elective units and Stream Core Units in addition to the required Core Units.

In developing approved training plans, RTOs must provide advice and ensure that all the critical aspects of evidence are present on completion of the units that make up the qualification.

Any units taken in addition to the minimum requirements of the qualification are not to be included within the qualification completion requirements but are to be appended to it.

[3] The process for inclusion and valuation of imported units is coordinated by the EE-Oz Training Standards, the DEST-declared Industry Skill Council for ElectroComms and EnergyUtilities Industry. Where assistance is required in this regard, contact EE-Oz Training Standards.

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Endorsements

In some instances there may be a requirement for a formal statement of 'endorsement' to be issued to individuals for a particular range of outcomes within a competency standard unit. Individuals are required to confirm this for compliance with regulatory or industry duty-of-care purposes. The information required to be reported on is detailed in the respective unit, and confirms the context the individual was deemed competent in, relative to the endorsement in the unit. This occurs in some Training Package units.

In the event that such Competency Standard Units are included in this Training Package, further information will be provided. Examples of this are:

UTENES409A means that the unit *Inspect visually existing hazardous area installations* needs to be reported with the endorsement of *pressurisation (Ex p)*.

On records and reports it will appear as:

> UTENES409A Inspect visually existing hazardous area installations – *pressurisation (Ex p)*

UTENES208A is the unit *Disconnect and reconnect fixed wire electrical equipment connected to supplies up to 1000 Volts a.c. or 1500 Volts d,c.* which has several endorsed categories of work – Pre-assembled types 1 and 2 cold cathode neon signs (N); Composite equipment incorporating one or more current-using devices and/or controls (P); Control devices (Q); Electrical water heaters (R); Motors (S) The alpha letter following each category of work is for references purposes and does not need to be reported. However, this competency standard unit does require the respective endorsed category of work to be reported. For example in the case of Motors, the endorsement is *(motors)*.

The transcript of record(s) and report(s) is to appear as:

> UTENES208A Disconnect and reconnect fixed wired electrical equipment connected to supplies up to 1000 Volts a.c. or 1500 Volts d.c. *(motors)*

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Unit Strand Totals (USTs) for qualification completion

The following tables detail the full range of qualifications, including their respective structure, composition and requirements. The completion rules that apply for each qualification are included in the Qualifications Structure below.

Code	Certificate I Qualifications	Core UST	Stream Core UST	Elective UST
UEE1 01 06	Certificate I in ElectroComms Skills	7	Nil	2

Code	Certificate II Qualifications	Core UST	Stream Core UST	Elective UST
UEE2 01 06	Certificate II in Air-conditioning Split Systems	16	Nil	2
UEE2 02 06	Certificate II in Business Equipment Servicing	16	Nil	2
	*Certificate II in Electrotechnology Business Support**	–	*Nil*	–
UEE2 04 06	Certificate II in Winding and Assembly	14	Nil	2
UEE2 05 06	Certificate II in Computer Assembly and Repair	17	Nil	1
UEE2 06 06	Certificate II in Custom Electronics Assembly and Setup	17	Nil	1
UEE2 07 06	Certificate II in Data and Voice Communications	19	Nil	0
	*Certificate II in Electrical Wholesaling**	–	*Nil*	–

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Code	Certificate II Qualifications	Core UST	Stream Core UST	Elective UST
UEE2 09 06	Certificate II in Electronic Assembly	16	Nil	2
UEE2 10 06	Certificate II in Fire Alarms Servicing	19	Nil	2
UEE2 11 06	Certificate II in Gaming Machines Servicing	14	Nil	4
UEE2 12 06	Certificate II in Antennae Equipment	16	Nil	2
UEE2 13 06	Certificate II in Remote Area Essential Service	17	Nil	6
UEE2 14 06	Certificate II in Remote Area Power Supply Maintenance	7	Nil	11
UEE2 15 06	Certificate II in Renewable Energy	22	Nil	0
UEE2 16 06	Certificate II in Security Assembly and Setup	18	Nil	1
UEE2 17 06	Certificate II in Technical Support	17	Nil	2
UEE2 18 06	Certificate II in Appliance Servicing – Refrigerants	13	Nil	3
UEE2 19 06	Certificate II in Electronics	12	Nil	6
UEE2 20 06	Certificate II in Electrotechnology (Career Start)	10	Nil	6
UEE2 21 06	Certificate II in Sustainable Energy (Career Start)	11	Nil	6

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Code	Certificate III Qualifications	Core UST	Stream Core UST	Elective UST
UEE3 01 06	Certificate III in Business Equipment	47	Nil	6
UEE3 02 06	Certificate III in Computer Equipment	40	Nil	13
UEE3 03 06	Certificate III in Custom Electronics Installations	33	Nil	20
UEE3 04 06	Certificate III in Data and Voice Communications	42	Nil	11
UEE3 05 06	Certificate III in Appliance Servicing	48	Nil	5
UEE3 06 06	Certificate III in Electrical Machine Repair	46	Nil	9
UEE3 07 06	Certificate III in Switchgear and Control Gear	48	Nil	5
UEE3 08 06	Certificate III in Electrotechnology Electrician	47	Nil	6
UEE3 09 06	Certificate III in Electronics and Communications	34	Nil	19
UEE3 10 06	Certificate III in Fire Protection Control	38	Nil	15
UEE3 11 06	Certificate III in Gaming Electronics	44	Nil	9
UEE3 12 06	Certificate III in Instrumentation and Control	49	Nil	4
UEE3 13 06	Certificate III in Refrigeration and Air-conditioning	50	Nil	3
UEE3 14 06	Certificate III in Security Equipment	46	Nil	7

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Code	Certificate III Qualifications	Core UST	Stream Core UST	Elective UST
UEE3 15 06	Certificate III in Rail – Communications and Networks	36	Nil	17
	*Certificate III in Wireless Communications**	–	Nil	–
UEE3 17 06	Certificate III in Hazardous areas – Electrician	48	Nil	5
UEE3 18 06	Certificate III in Hazardous areas – Instrumentation	50	Nil	3
UEE3 19 06	Certificate III in Explosion-protected equipment overhaul	50	Nil	3

Code	Certificate IV Qualifications	Core UST	Stream Core UST	Elective UST
UEE4 01 06	Certificate IV in Computer Systems	30	Nil	34
UEE4 02 06	Certificate IV in Electrical – Data and Voice Communications	62	Nil	2
UEE4 03 06	Certificate IV in Electrical Installation Inspection and Audits	51	Nil	13
UEE4 04 06	Certificate IV in Electrical – Instrumentation	56	Nil	8
UEE4 05 06	Certificate IV in Electrical – Air-conditioning Systems	51	Nil	13
UEE4 06 06	Certificate IV in Electrotechnology – Systems Electrician	46	Nil	18
UEE4 07 06	Certificate IV in Electronics and Communications	33	Nil	31

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Code	Certificate IV Qualifications	Core UST	Stream Core UST	Elective UST
UEE4 08 06	Certificate IV in Electrical – Fire Protection Control Systems	57	Nil	7
UEE4 09 06	Certificate IV in Industrial Electronics and Control	46	Nil	18
UEE4 10 06	Certificate IV in Energy Management and Control	52	Nil	12
UEE4 11 06	Certificate IV in Electrical – Lift Systems	58	Nil	6
UEE4 12 06	Certificate IV in Electrical – Rail Signalling	47	Nil	17
UEE4 13 06	Certificate IV in Refrigeration and Air-conditioning Servicing	54	Nil	10
UEE4 14 06	Certificate IV in Refrigeration and Air-conditioning Systems	59	Nil	5
UEE4 15 06	Certificate IV in Video and Audio Systems	45	Nil	19
UEE4 16 06	Certificate IV in Renewable Energy	50	Nil	14
UEE4 17 06	Certificate IV in Rail – Communications and Network Systems	37	Nil	27
UEE4 18 06	Certificate IV in Hazardous areas	51	Nil	13

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Code	Diploma Qualifications	Core UST	Stream Core UST	Elective UST
UEE5 01 06	Diploma of Computer Systems Engineering	34	Nil	46
UEE5 02 06	Diploma of Electrical and Instrumentation	48	Nil	32
UEE5 03 06	Diploma of Electrical and Refrigeration and Air-conditioning	71	Nil	9
UEE5 04 06	Diploma of Electrical Engineering	48	Nil	32
UEE5 05 06	Diploma of Electronics and Communications Engineering	35	Nil	45
UEE5 06 06	Diploma of Refrigeration and Air-conditioning Engineering	69	Nil	11
UEE5 07 06	Diploma of Renewable Energy Engineering	48	Nil	32
UEE5 08 06	Diploma of Research and Development	30	Nil	50
UEE5 09 06	Diploma of Industrial Electronics and Control Engineering	48	Nil	32

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Code	Advanced Diploma Qualifications	Core UST	Stream Core UST	Elective UST
UEE6 01 06	Advanced Diploma of Electrical Engineering	64	Nil	44
UEE6 02 06	Advanced Diploma of Electronics and Communications Engineering	41	Nil	67
UEE6 03 06	Advanced Diploma of Electrical/Electronic – Technology	50	Nil	40
UEE6 04 06	Advanced Diploma of Computer Systems Engineering	42	Nil	66
UEE6 05 06	Advanced Diploma of Computer Systems – Technology	45	Nil	45
UEE6 06 06	Advanced Diploma of Industrial Electronics and Control Engineering	63	Nil	45
UEE6 07 06	Advanced Diploma of Refrigeration and Air-conditioning Engineering	85	Nil	23
UEE6 08 06	Advanced Diploma of Refrigeration and Air-conditioning – Technology	40	Nil	50
UEE6 09 06	Advanced Diploma of Renewable Energy Engineering	63	Nil	45
UEE6 10 06	Advanced Diploma of Renewable Energy – Technology	41	Nil	49
UEE6 11 06	Advanced Diploma of Automated Systems Maintenance Engineering	28	Nil	80
UEE 6 12 06	Advanced Diploma of Engineering – Explosion protection	62	Nil	46

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1.1.5 Qualifications and Competency – Recognition/Issuance Requirements

Formal recognition of competency achievement may be in the form of:

- a full qualification in accordance with the criteria established under the Electrotechnology Industry Qualifications Framework and Structure. Where the title of the qualification within the framework and structure requires further clarity to satisfy State/Territory, enterprise and/or regulatory requirements, an additional occupational identifier to the title in the Electrotechnology Industry Qualifications Framework and Structure shall be provided.
- a Statement of Attainment, and where appropriate an authorised entry in an individual's Statement of Competency or Industry Skills Passport or approved instrument, which recognises the attainment of a subset group of individual Competency Standard Units within a full qualification. Where the Statement of Attainment within the qualification structure requires further clarity to satisfy State/Territory, enterprise and regulated requirements, an additional identifier, Record of Achievement/Statement of results, or other such statement is to be provided.

Formal recognition of respective types is to be issued by an RTO. The recognition is to be recorded on formats established by these requirements and/or relevant State Training Authorities and to include additional items which have been agreed by industry and/or regulators together with the Industry Skill Council for the ElectroComms and EnergyUtilities Industry or its nominated representatives. As a minimum, the formal recognition is to include:

- the name of the recipient
- the title of the qualification or Statement of Attainment
- the title and logo of the RTO
- the logos of the relevant State/Territory Training and Recognition Authorities, the Nationally Recognised Training logo and, preferably, the logo of the Industry Skill Council
- an attached transcript of information that is meaningful for maximum recognition and skills transfer. Generally this would be the individual competency standard unit titles and any endorsement or subset thereof, as well as detailed formal advice about the achieved results of the interrelated essential knowledge and associated skills. In this Training Package the successful attainment of the specified essential knowledge and associated skills for each unit forms a critical part of the unit outcome. Where regulated requirements advise the use of training support material(s) and it is used to provide the essential knowledge and skills specified in the unit, details of the support material(s) and their achievement should form part of the statement of results attached to the qualification or statement of attainment.
- any endorsements for regulatory outcomes/recognition.

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1.1.6 Pathways into Individual Qualifications

Within the Electrotechnology Industry three (3) 'learning pathways' have been identified and listed in Part 2 Assessment Guidelines. Within these, six (6) 'qualifications pathways' are available for individuals. These are:

- entry-level contracted employment as a New Apprenticeship
- employees whose current occupation needs to be upgraded to a new Electrotechnology Industry Qualification (including those trained outside Australia)
- allied occupations wishing to multi-skill by seeking to obtain an Electrotechnology Industry Qualification (including those trained outside Australia)
- employees of a telecommunication company who have limited data-communications skills seeking to obtain an Electrotechnology Industry Qualification (including those trained outside Australia)
- a pathway utilising an institution-only delivery model that produces quality outcomes to the standard of performance specified in the CSUs in the Training Package
- others with related and allied skill sets.

The pathways identify how competence is developed and how evidence is gathered for the assessment of competence. In general these pathways will include outcomes equivalent to a combination of on-and off-the job training strategies, supported by the industry and regulators, and leading to the achievement and demonstration of competence.

While there are historically established norms relating to the duration of apprentices' learning and particularly for new entry-level contracted employment entrants, some reduction in this time could be achieved through comprehensive structured arrangements in a workplace/institution. This can be achieved by reducing peripheral activities that occur naturally in an actual workplace; however it is the responsibility of the institute/skill centre, assisted by an employer where appropriate, to ensure the required outcomes are met. The use of realistic simulation of the work environment is likely to involve considerable cost, possibly prohibitive, and is a matter for the respective parties. The industry-preferred arrangement is a combination of off-and on-the-job pathway for new entrants. It is clearly a more cost-effective medium than an institutional pathway or a totally on-the-job approach where developing competency is underpinned by a rich knowledge base.

It is acknowledged that all pathways are possible and only limited by costs. The RTO determines where the training and assessment is provided and where work performance evidence is gathered, however the decision must be made in consultation and in accord with the industry and employer/learner.

This must not limit in any way opportunities for entry into respective qualifications for those considered under-represented or from identified disadvantaged groups. These groups include persons from non-English speaking backgrounds, women, indigenous persons or persons with a disability. Appropriate measures should be used to accommodate reasonable adjustments for entry into and completion of the respective qualifications.

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The RTO must carry out such activity in accordance with the criteria established by the relevant State/Territory Training Authority, the AQTF Standards for RTOs to effect a realistic assessment outcome, and as outlined in the respective parts of this Training Package, including any prevailing regulatory requirements.

The industry acknowledges that the institutional pathway is more expensive than a structured learning/training model that assures a combination of all on-the-job approach to developing competence.

All evidence relating to performance requirements and critical aspects of evidence must be present for competence to be attributed. Assessment processes and methodologies must ensure that best practice in assessment and the process of making judgement about attributing competence remains valid and reliable.

Articulation pathways

Qualification articulation, and entry and exit arrangements, are based on the specific training and education requirements endorsed by the industry. The construction of individual competency standard units, and the groups of units that make up individual qualifications are of particular significance to the operational, regulatory and safety arrangements of the industry. Each qualification provides a unique vocational outcome that can be used for new apprentices as entry-level contracted employees.

All qualifications are open entry and open exit and are available for use as new apprenticeship entry-level contracted employment. New apprenticeship arrangements are subject to State/Territory statutory requirements, prescriptions within industrial instruments and policies of State/Territory training authorities and RTOs. In the first instance, reference to what applies should be made from respective statutory bodies.

New Apprenticeship arrangements apply to all qualifications; however, they are subject to State/Territory statutory requirements, prescriptions within industrial instruments and policies of State/Territory training authorities.

Open entry is provided into all qualifications, Open entry is available at all levels provided the prospective learner's general education and competency level is equivalent to the outcome of four to five years of secondary school. Additionally, entry levels provide an option for potential learners to choose a qualification suited to their needs while providing flexibility for recruitment action by employers. Entry requires that any listed prerequisite competency standard unit requirements must be met. Where these entry requirements are not met, a requisite entry-bridging program would be developed by an RTO and submitted in consultation with EE-Oz Training Standards for information and distribution. Entry into all qualifications is also available through Recognised Prior Learning (RPL) arrangements.

Access, Equity and Cultural Diversity

The skills required of employees in the Electrotechnology Industry are relevant to many work positions/roles. The qualifications in this Training Package reflect this range of competencies and are written in a non-exclusive manner to increase equity of participation for all disadvantaged groups and to minimise unintentional bias.

Key Competencies

Key Competencies interrelate with qualification outcomes through the medium of each competency standard unit that makes up the qualification. The Key Competencies are

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described in their own section in each unit. See more on Key Competencies later in this Volume (Competency Standards) and in Volume 2 Part 4 Key Competencies.

Skills Enabling Employment

Information related to specific skills for enabling employment is included in this Training Package. This can facilitate entry into the industry and the qualifications on offer. The information is introduced in each competency standard unit and skills enabling employment are described in their own section in each unit. See more detail later in this Volume (Competency Standards) and Volume 2 Part 5 Skills Enabling Employment.

Recently, the NQC resolved that Employability Skills are to be embedded into Training Packages where these skills are deficient. In consideration of this, the NQC has supported the establishment of a quality assurance panel to oversee audits of endorsed Training Packages in collaboration with declared Industry Skills Councils (ISCs).

EE-Oz Training Standards in agreement with DEST has agreed to audit and map the 'Skills Enabling Employment' model framework against the NQC's endorsed employability skills. The audit process is expected to take 12 months from the Training Package endorsement date. If required an action plan will then be implemented to enable transition from the existing 'Skills Enabling Employment' model framework to the new arrangement.

Language, Literacy and Numeracy

A new section related to language, literacy and numeracy skills has been included in each competency standard unit. It provides RTOs, industry and career aspirants with relevant language, literacy and numeracy entry-level advice, to maximise the prospects of successful completion of the unit and any qualification(s).

The language, literacy and numeracy definitions and requirements are described in more detail in Volume 2, Part 3 Language, Literacy and Numeracy Skills. Each Competency standard unit in Volume 2 references the respective language, literacy and numeracy skills that apply.

New Apprenticeship – application

New Apprenticeships are work-related competency programs designed for entry-level contracted employment for new entrants to the industry. For further information regarding New Apprenticeships and their application in relation to this Training Package refer to Appendix A New Apprenticeship – application. Appendix A is located at the end of Volume 1.

Prerequisite Competency Standard Units

A prerequisite requirement statement applies to each qualification structure and **all of any prerequisite requirements must be acquired**. Prerequisites are listed in each competency standard unit under Section 3.1, as well as in Table 2 *Summary of CSUs, Relationship to Former Training Package and Prerequisites* in Volume 1 Part 2 Competency Standards.

Prerequisite Flowcharts

A range of qualification and competency standard unit advisory flowcharts showing possible/suggested prerequisite flows have been developed by industry to:

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- assist RTOs in their planning processes
- obtain a worthwhile outcome from each unit
- ensure that the units are deliverable
- maintain the high standard of safety and skill development
- ensure consistency and quality of outcomes
- ensure a worthwhile career pathway without hindrance.

It should be noted that the authoritative point of reference for relevant prerequisites is in the competency standard unit – the flowcharts are advisory. The flowcharts are provided as a guide only and should be read in conjunction with the respective qualification structure, elective schedules and competency standard units.

The flowcharts depicted on the following pages enable a clearer visual and advisory display of the prerequisite requirements and provide for career planning pathways as they relate to key qualifications contained in this Training Package, namely:

Qualification Pathway Flowcharts

Qualification Title	Flowchart
Certificate III in Computer Equipment (30206)	Flowchart 1
Certificate III in Electrotechnology Electrician (30806)	Flowchart 2
Certificate III in Electronics and Communications (30906)	Flowchart 3
Certificate III in Instrumentation and Control (31206)	Flowchart 4
Certificate III in Refrigeration and Air-conditioning (31306)	Flowchart 5
Certificate IV in Computer Systems (40106)	Flowchart 6
Certificate IV in Electrical – Data and Voice Communications (40206)	Flowchart 7
Certificate IV in Electrical – Instrumentation (40406)	Flowchart 8
Certificate IV in Electrotechnology – Systems Electrician (40606)	Flowchart 9
Certificate IV in Electronics and Communications (40706)	Flowchart 10
Certificate IV in Refrigeration and Air-conditioning Systems (41306) Certificate IV in Refrigeration and Air-conditioning Servicing (401406)	Flowchart 11
Certificate IV in Video and audio Systems (41506)	Flowchart 12
Diploma of Computer Systems Engineering (50106)	Flowchart 13

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Qualification Title	Flowchart
Diploma of Electrical and Refrigeration and Air-conditioning (50306)	Flowchart 14
Diploma of Electrical Engineering (50406)	Flowchart 15
Diploma of Electronics and Communications Engineering (50506)	Flowchart 16
Diploma of Refrigeration and Air-conditioning Engineering (50606)	Flowchart 17
Diploma of Industrial Electronics and Control Engineering (50906)	Flowchart 18
Advanced Diploma of Electrical Engineering (60106)	Flowchart 19
Advanced Diploma of Electronics and Communications Engineering (60206)	Flowchart 20
Advanced Diploma of Electrical/Electronic – Technology(60306)	Flowchart 21
Advanced Diploma of Computer Systems Engineering (60406)	Flowchart 22
Advanced Diploma of Computer Systems – Technology (60506)	Flowchart 23
Advanced Diploma of Refrigeration and Air-conditioning Engineering (60706)	Flowchart 24

Note: Elective Competency Standard Units used in the flowcharts are examples only. Other elective Competency Standard Units are possible and may be selected from the specified schedules.

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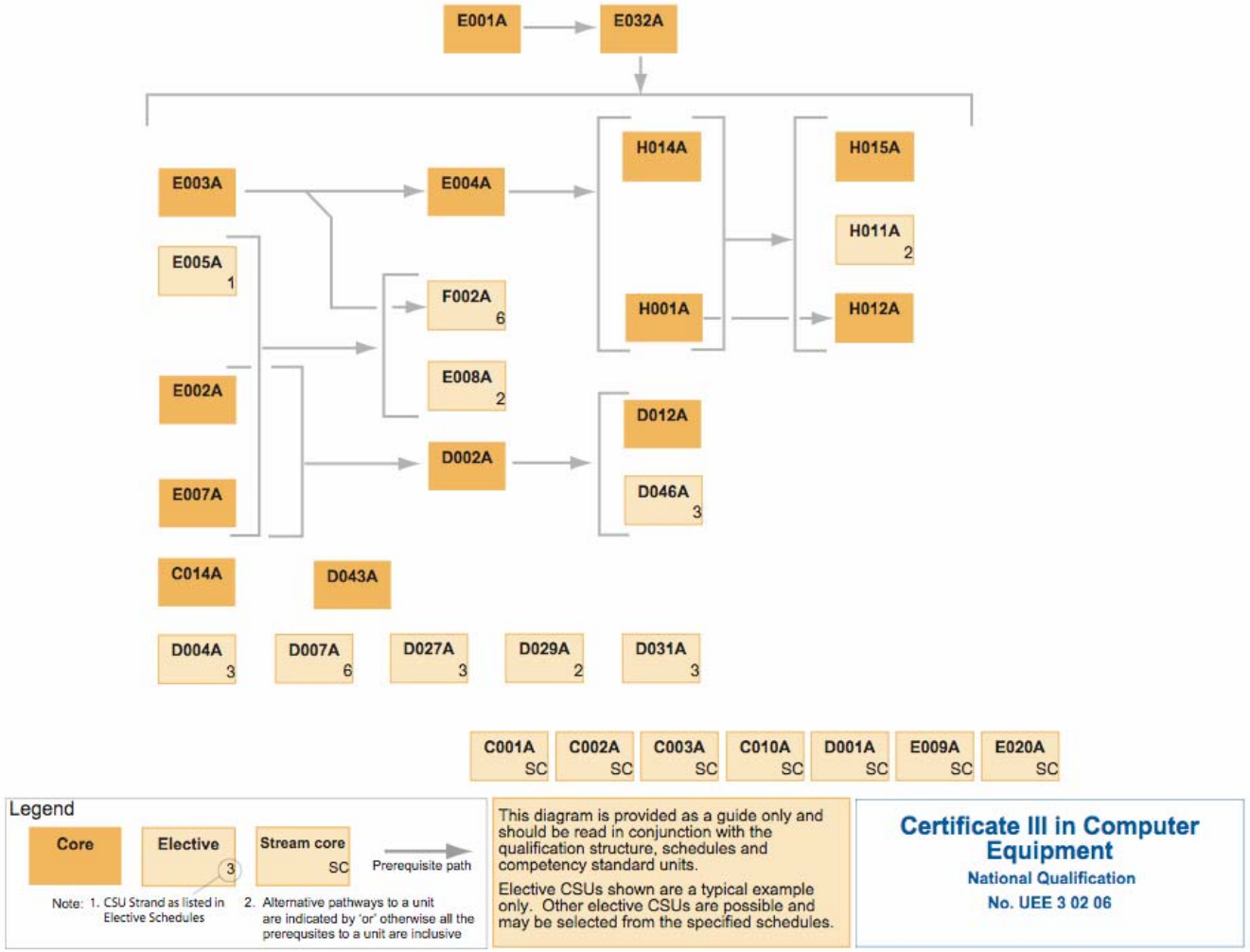
Flowchart 1 – Certificate III in Computer Equipment



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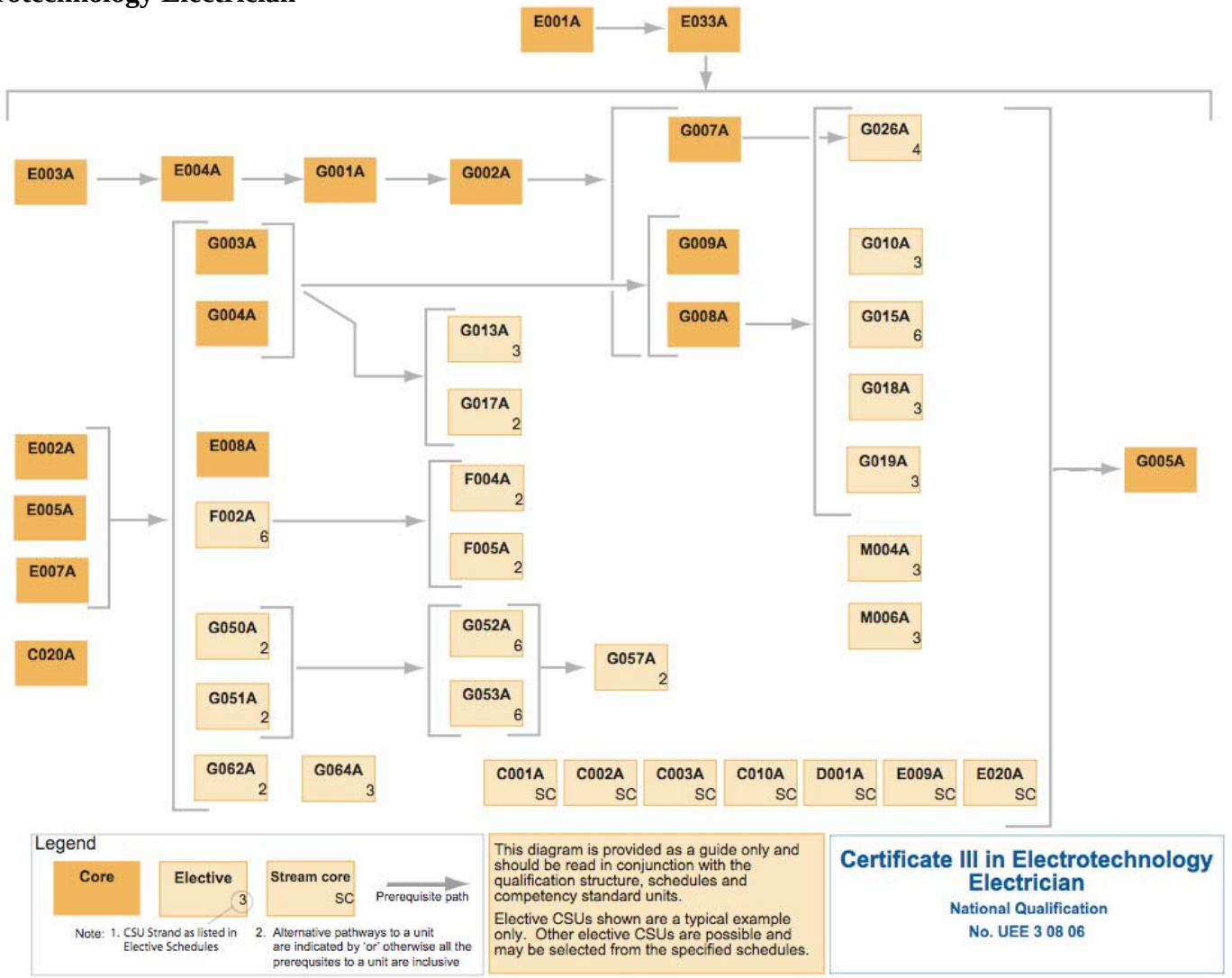
Flowchart 2 – Certificate III in Electrotechnology Electrician



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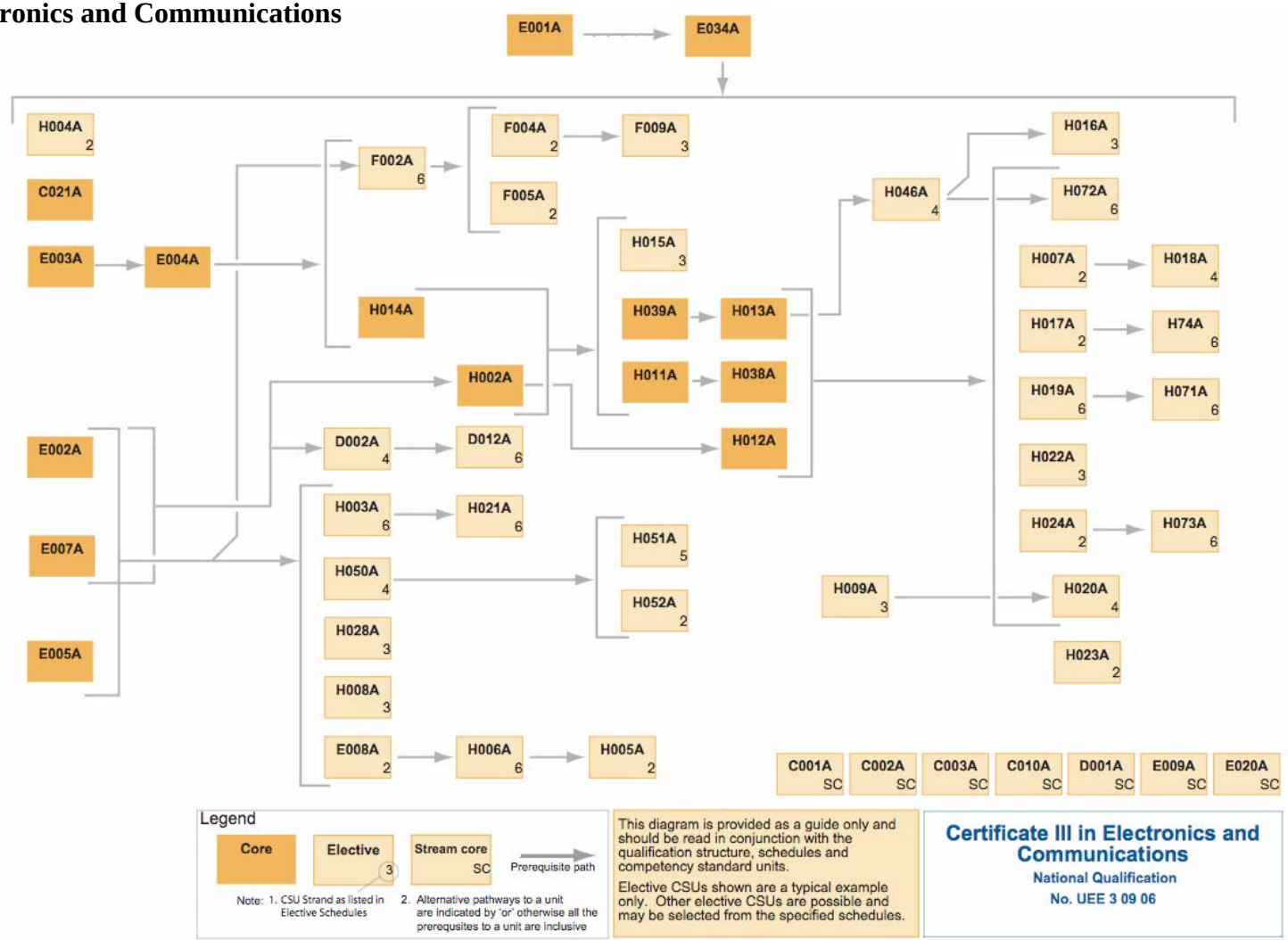
Flowchart 3 – CIII in Electronics and Communications



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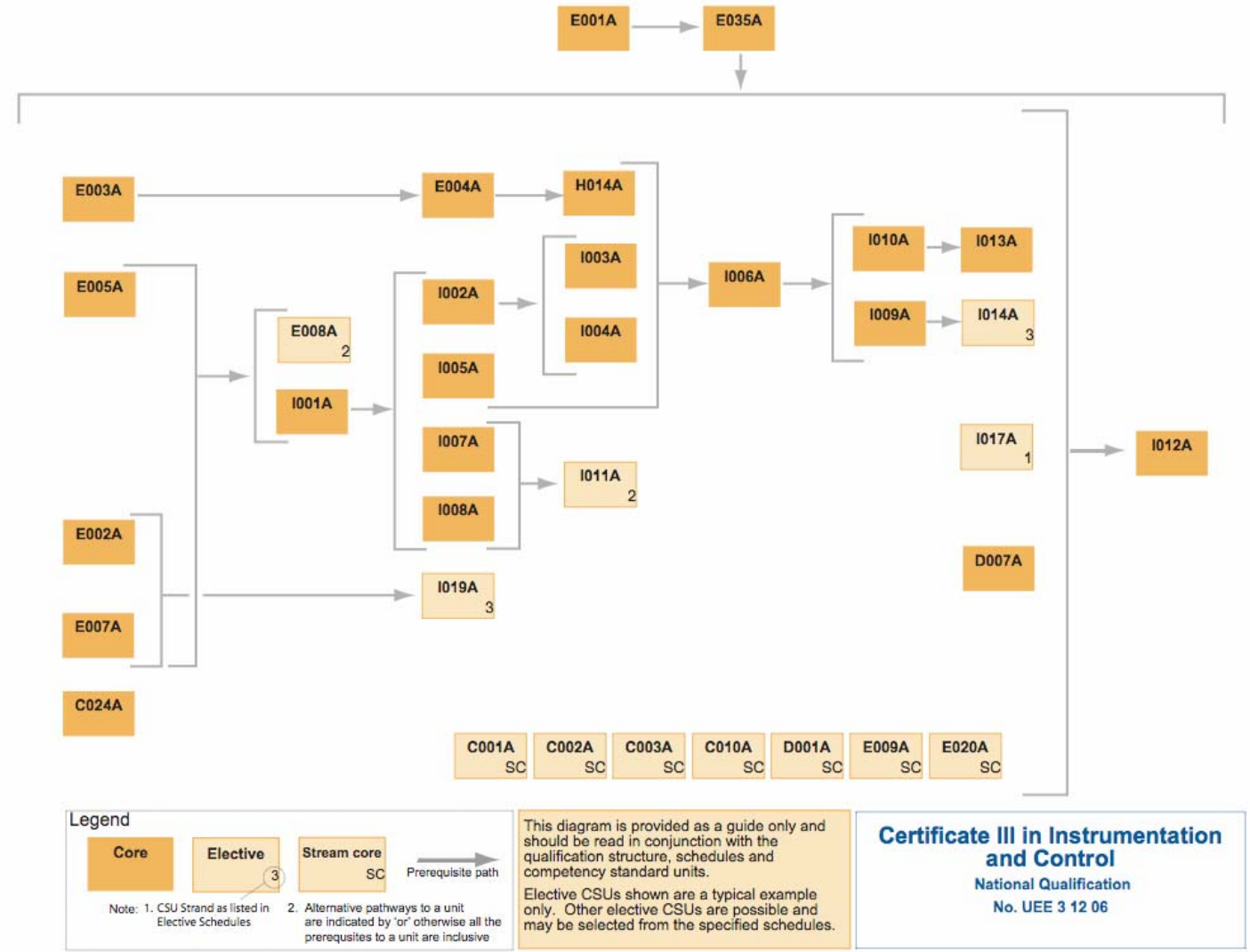
Flowchart 4 – CIII in Instrumentation and Control



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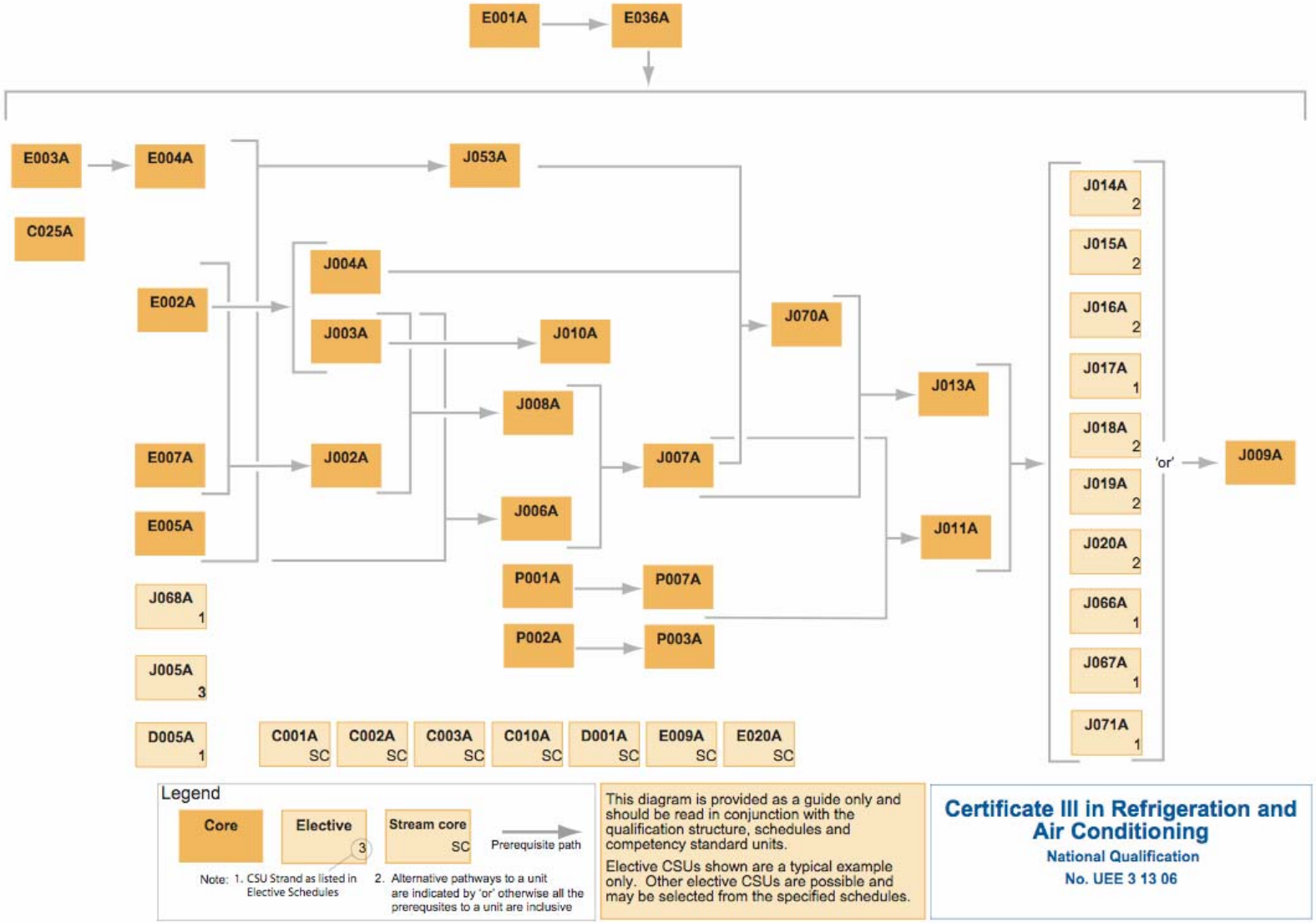
Flowchart 5 – CIII in Refrigeration and Air-conditioning



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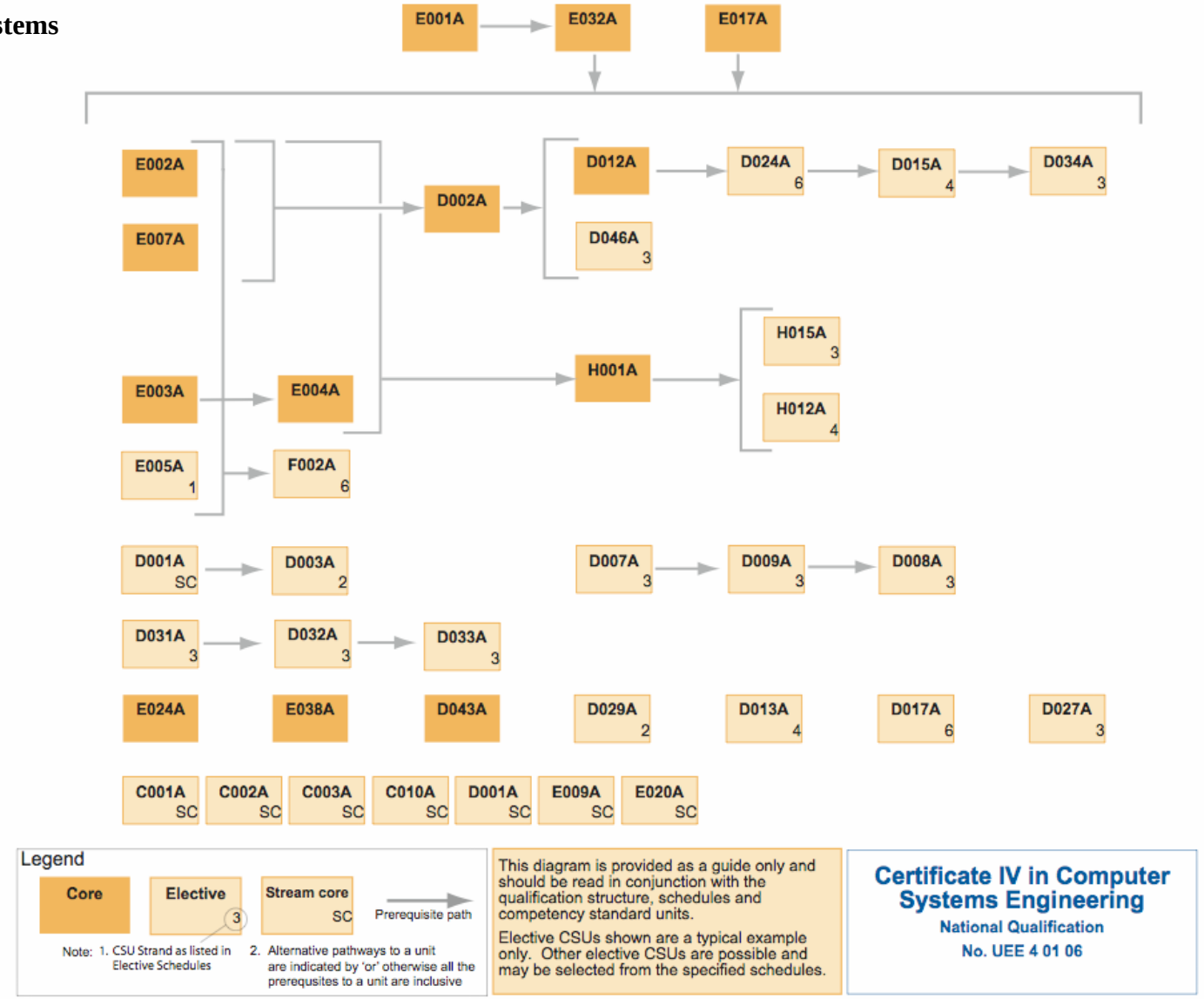
Flowchart 6 – CIV in Computer Systems



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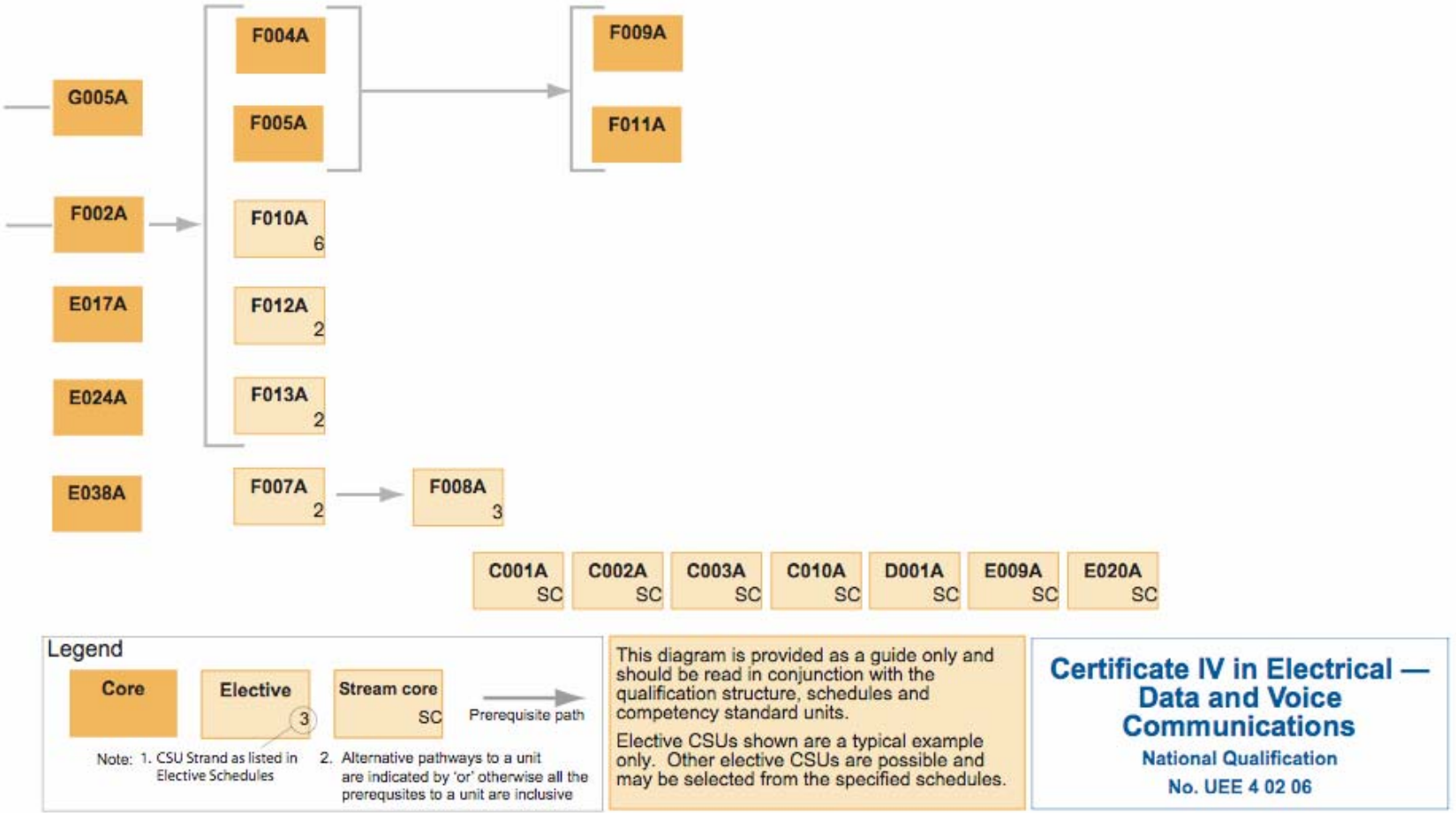
Flowchart 7 – CIV in Electrical – Data and Voice Communications



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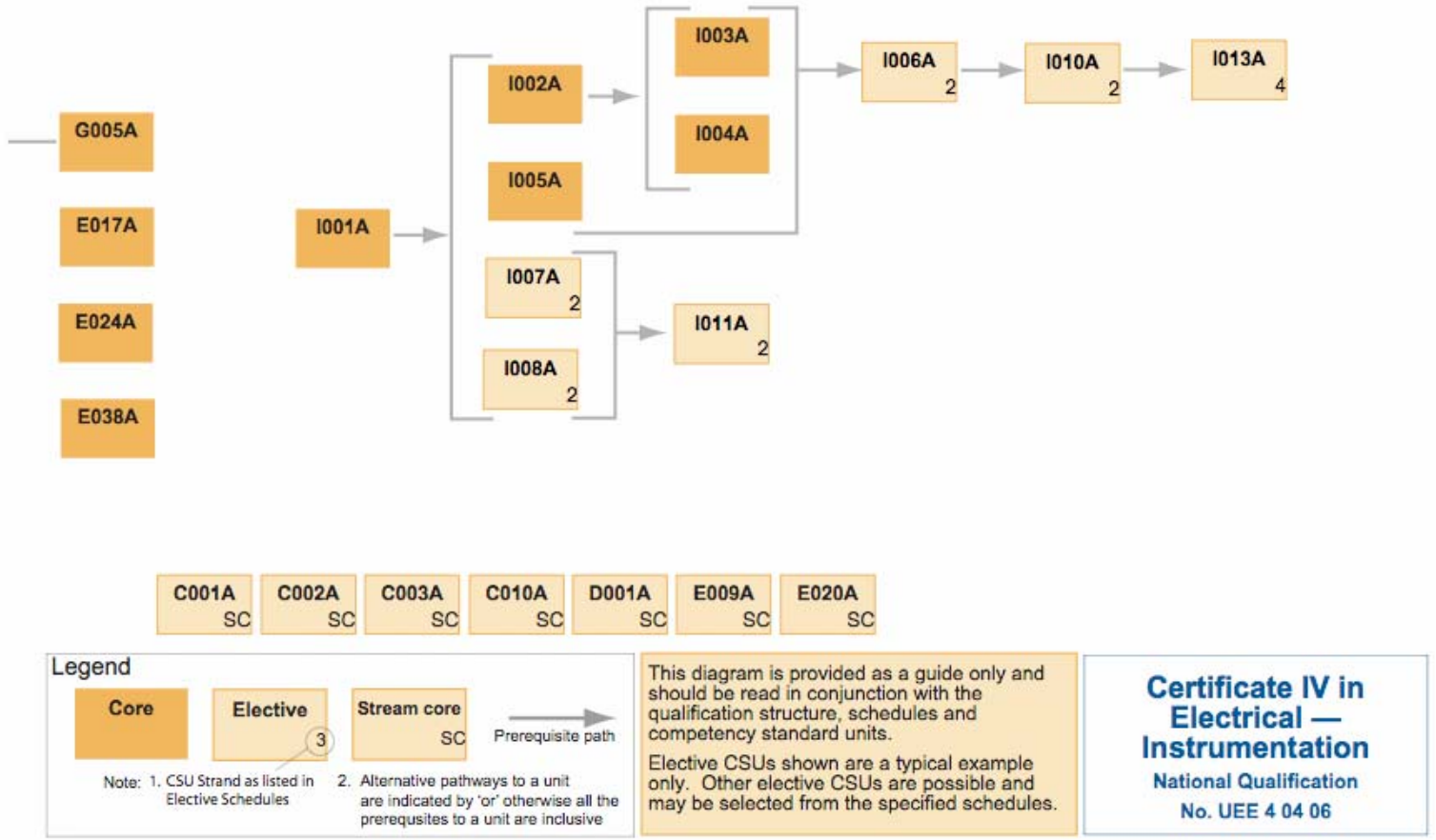
Flowchart 8 – Certificate IV in Electrical – Instrumentation



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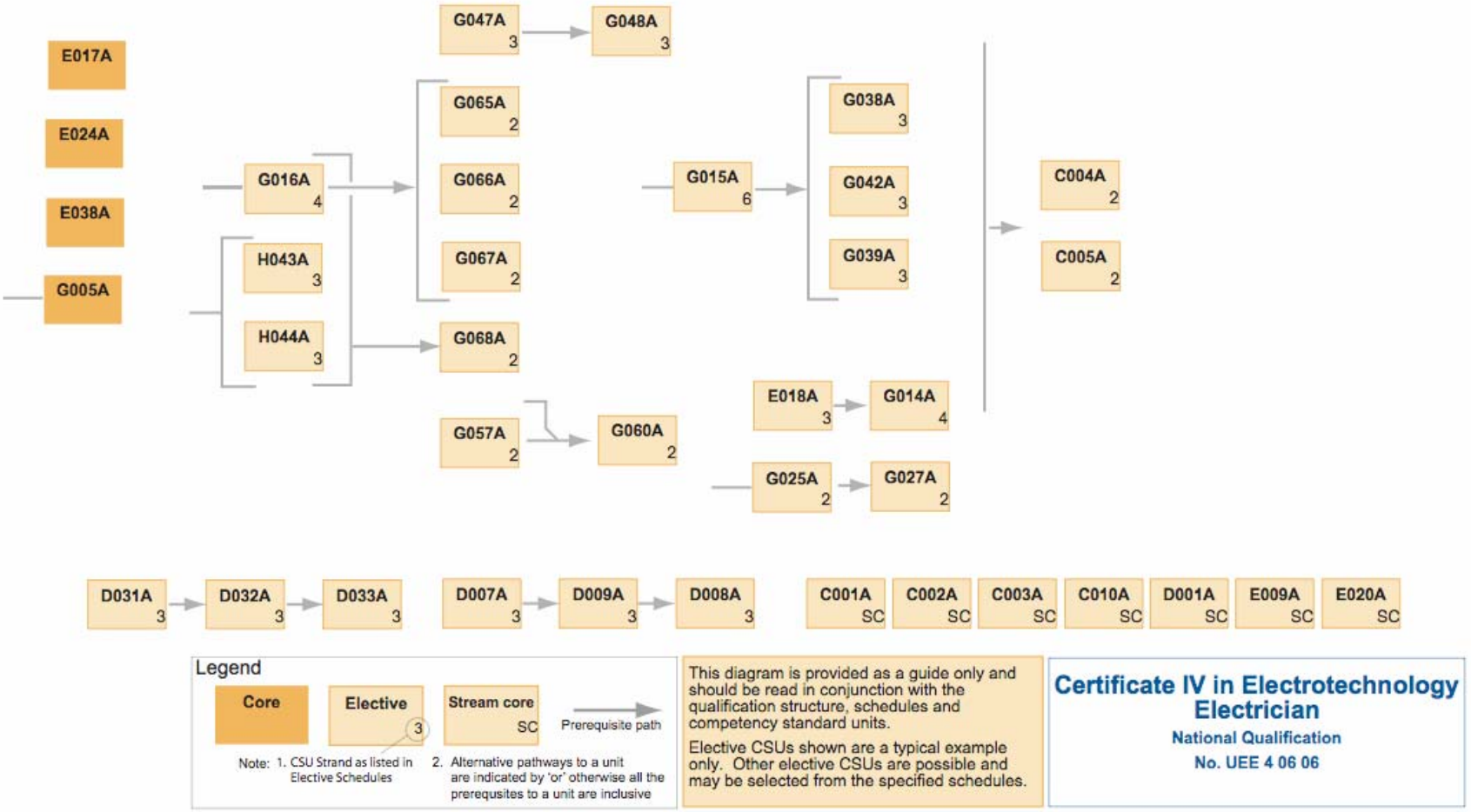
Flowchart 9 – Certificate IV in Electrotechnology – Systems Electrician



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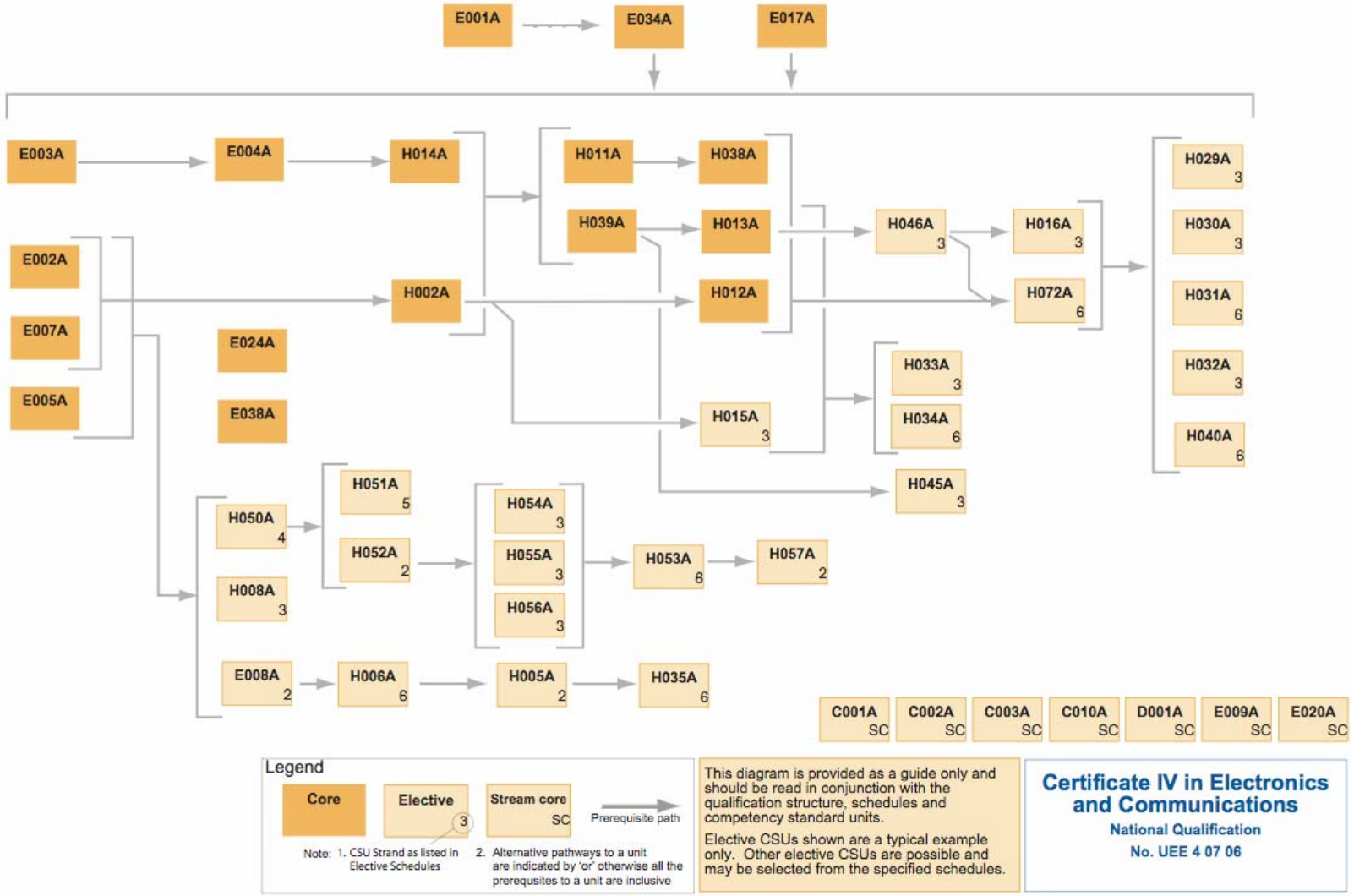
Flowchart 10 – CIV in Electronics and Communications



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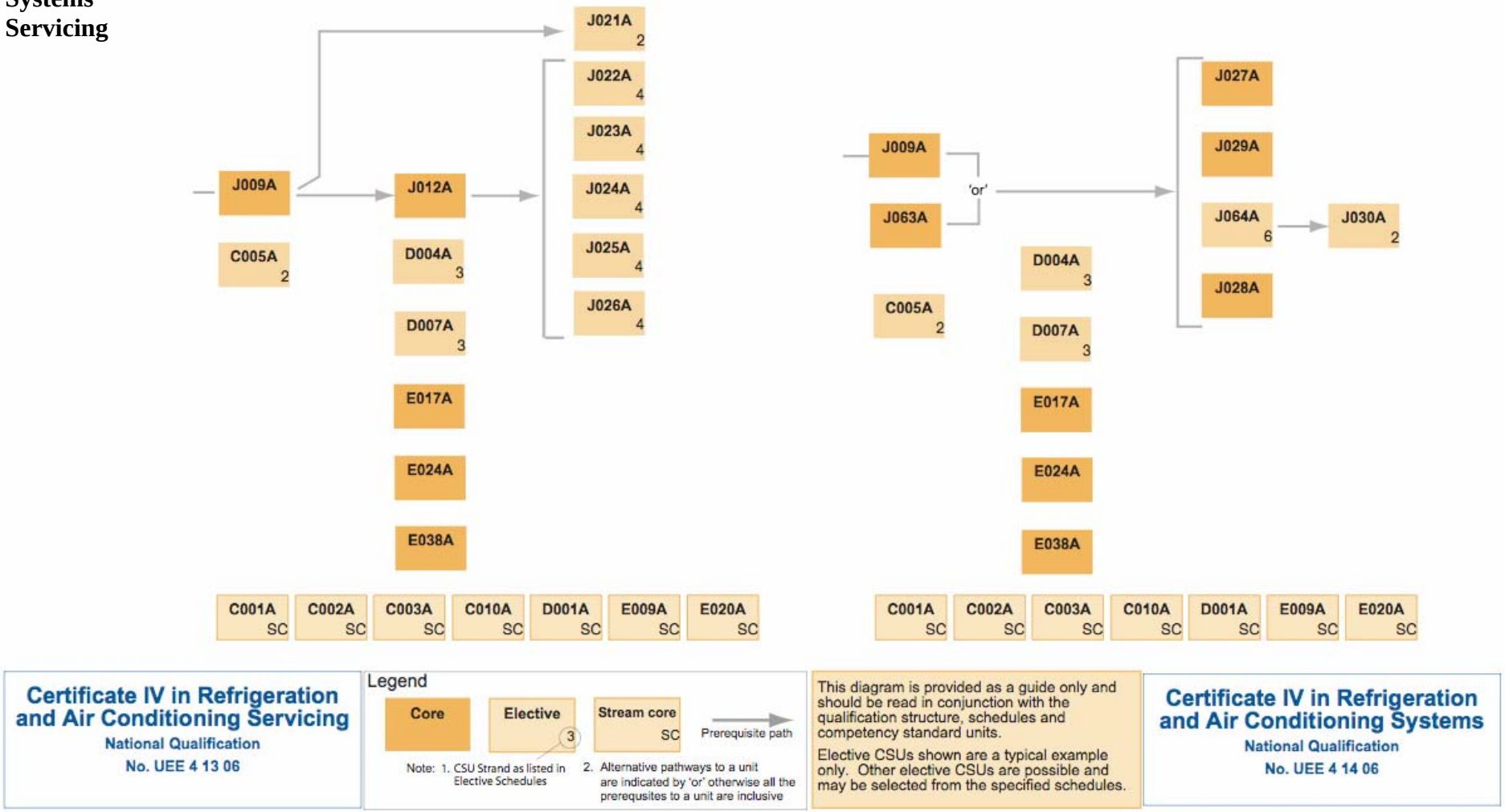
Flowchart 11 – CIVs in RAC
1) Systems
2) Servicing



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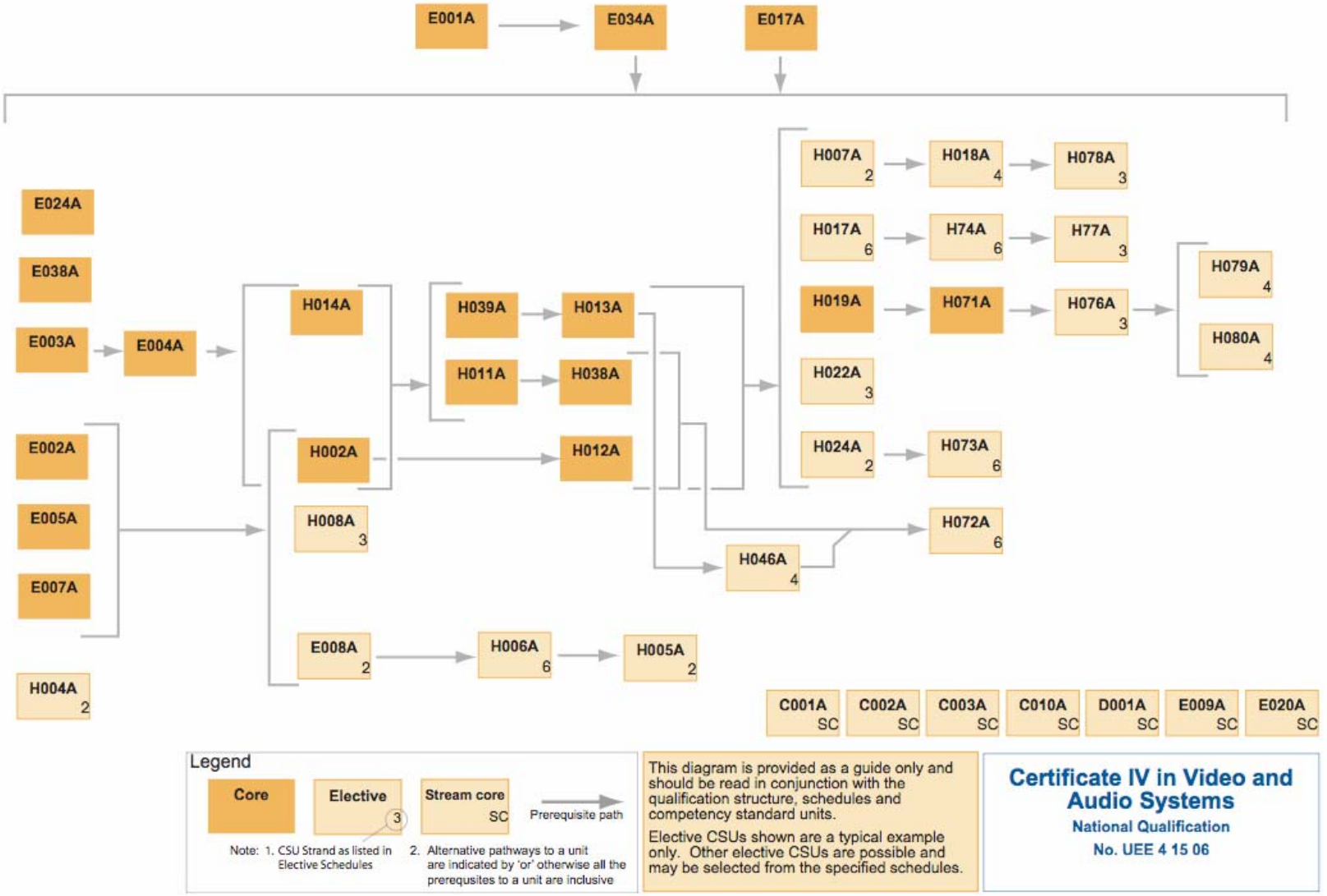
Flowchart 12 – Certificate IV in Video and Audio Systems



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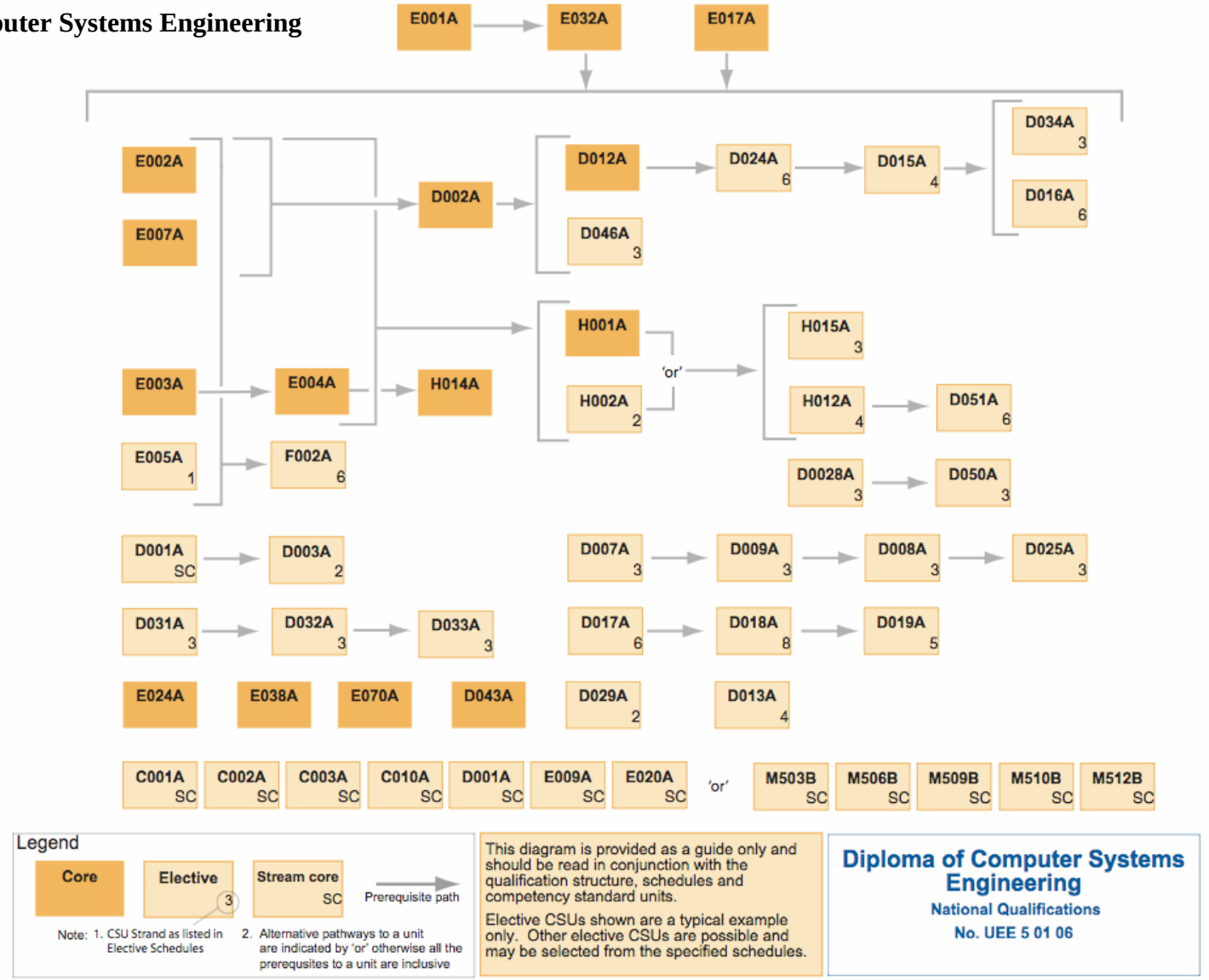
Flowchart 13 – Diploma of Computer Systems Engineering



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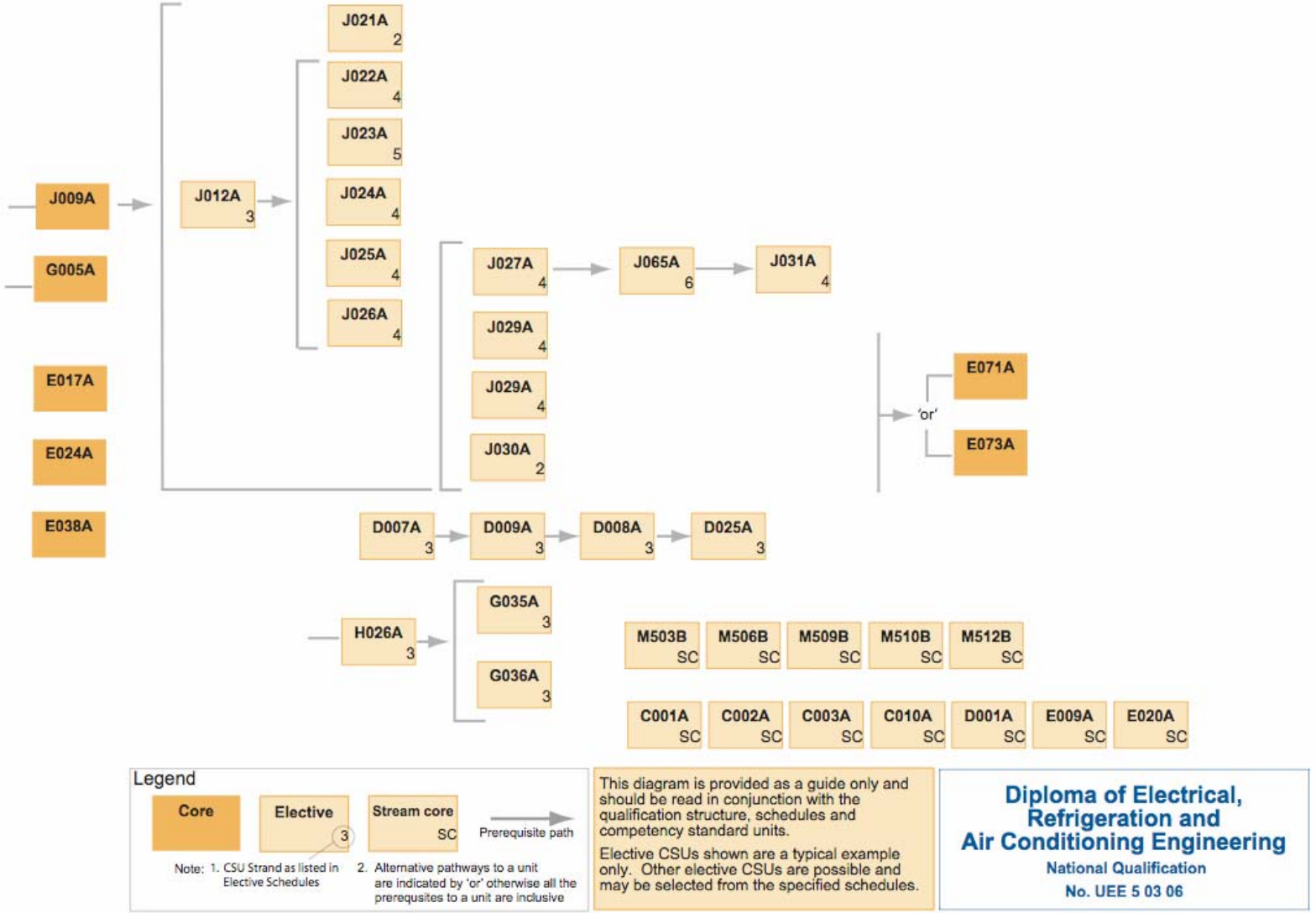
Flowchart 14 – Diploma of Electrical and Refrigeration and Air-conditioning



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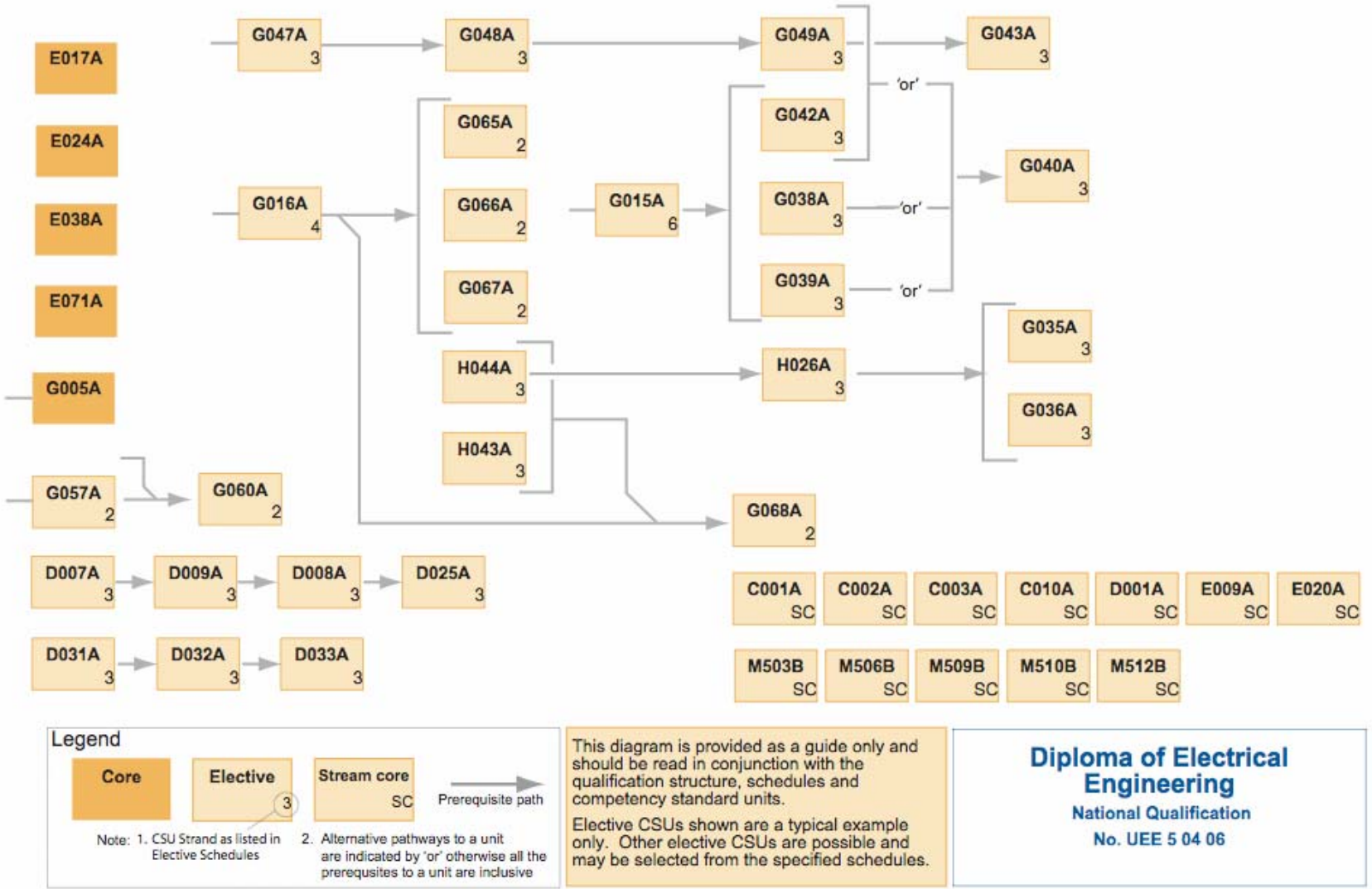
Flowchart 15 – Diploma of Electrical Engineering



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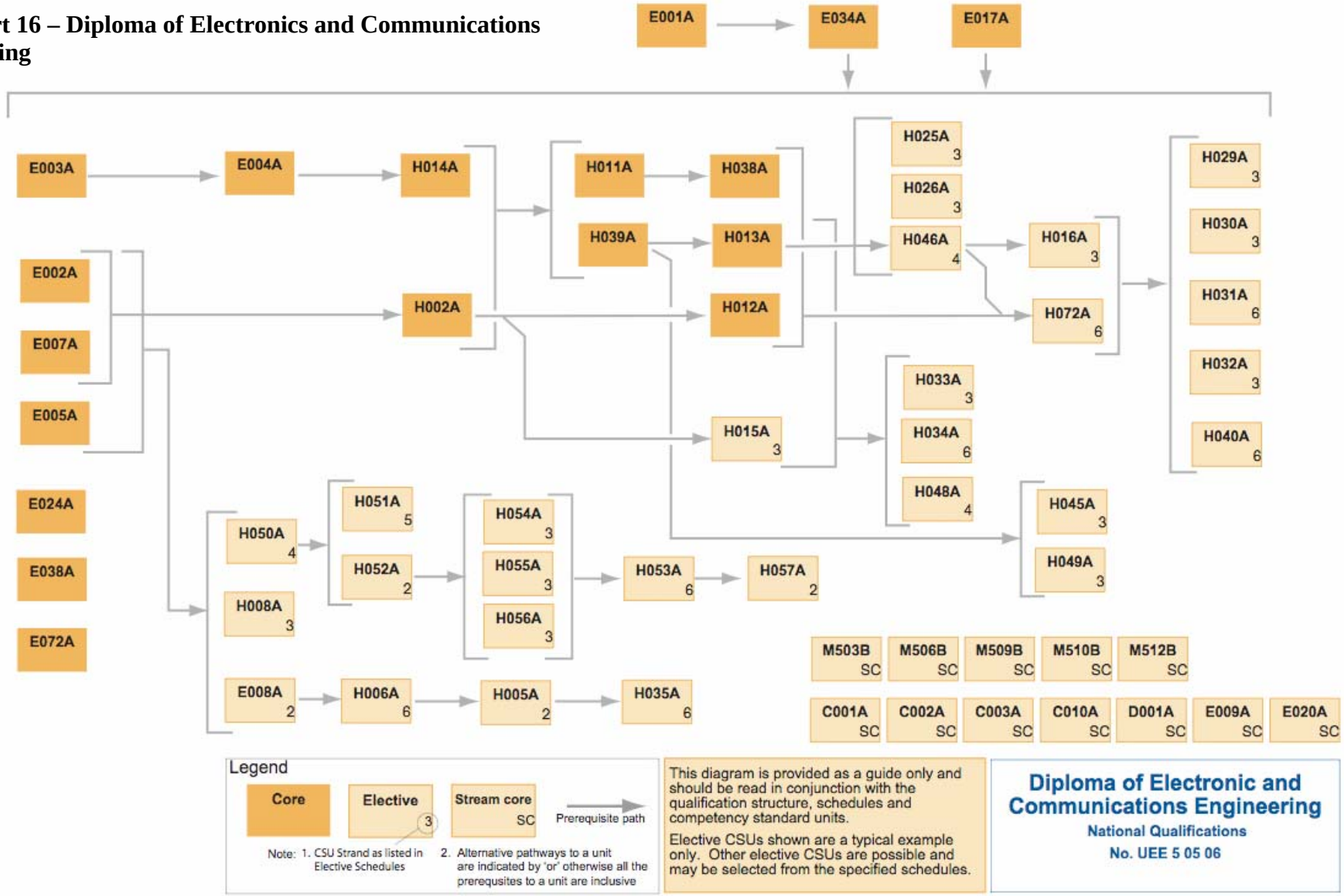
Flowchart 16 – Diploma of Electronics and Communications Engineering



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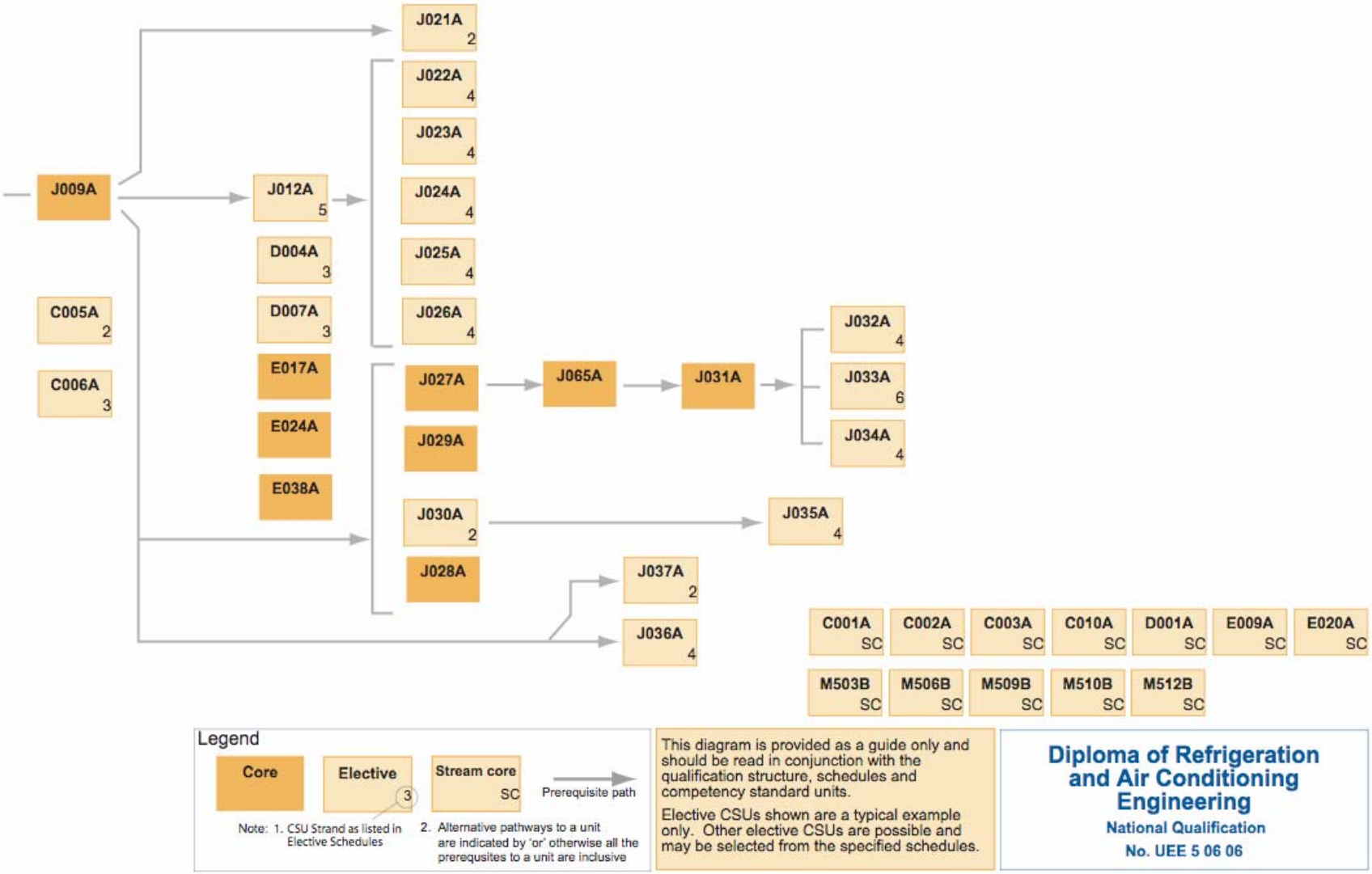
Flowchart 17 – Diploma of RAC Engineering



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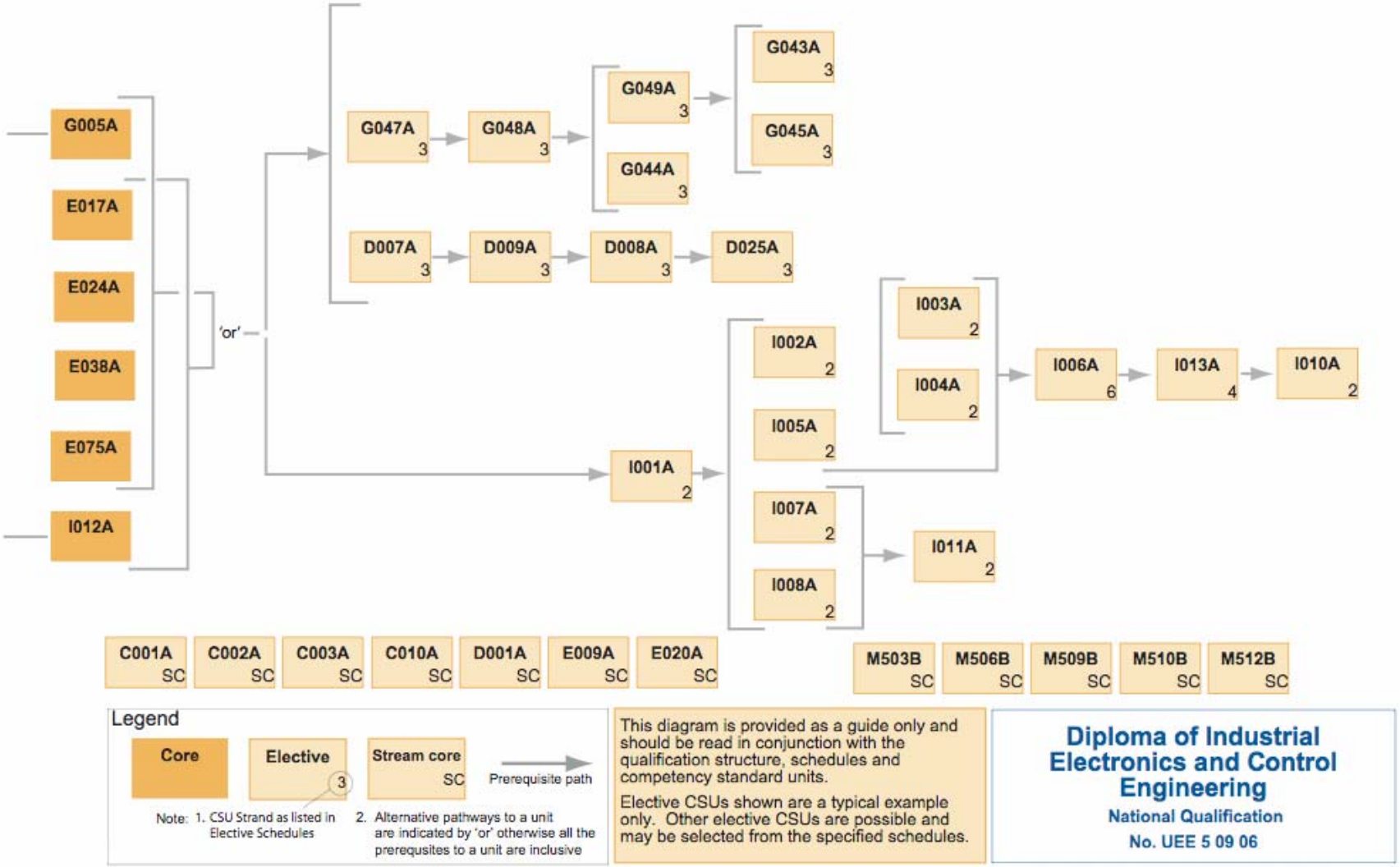
Flowchart 18 – Diploma of Industrial Electronics and Control Engineering



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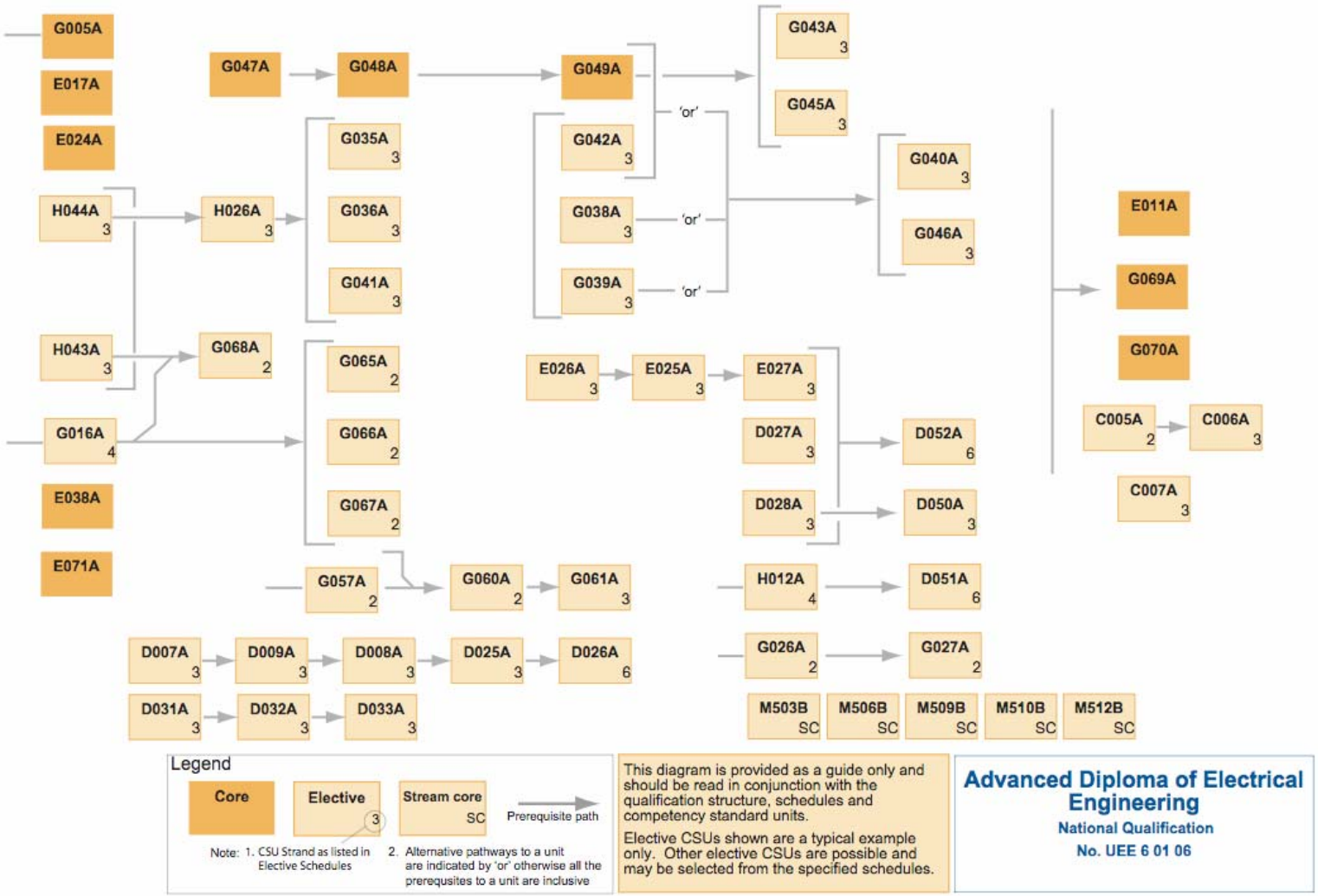
Flowchart 19 – Advanced Diploma of Electrical Engineering



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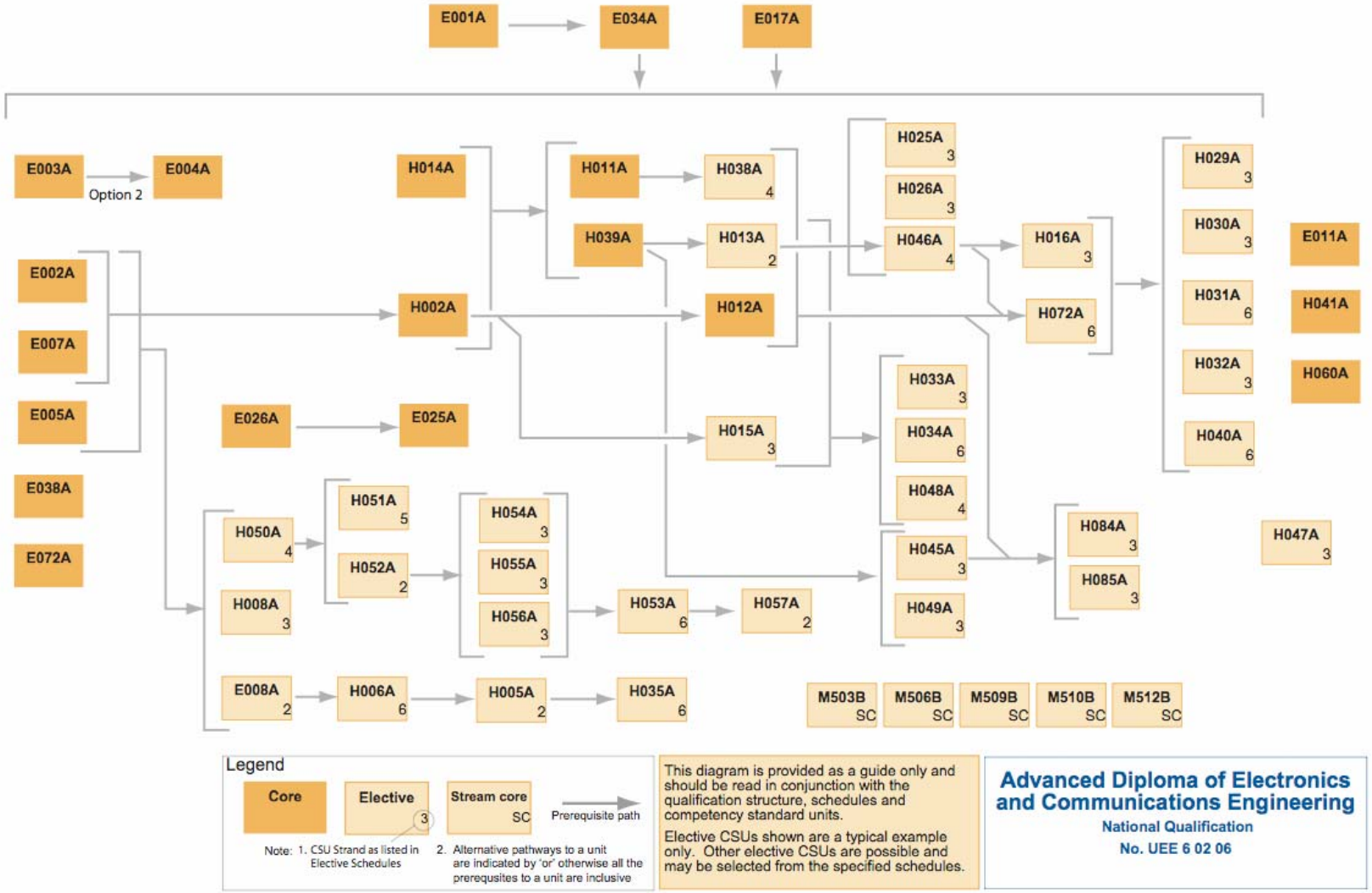
Flowchart 20 – Advanced Diploma of Electronics and Communications Engineering



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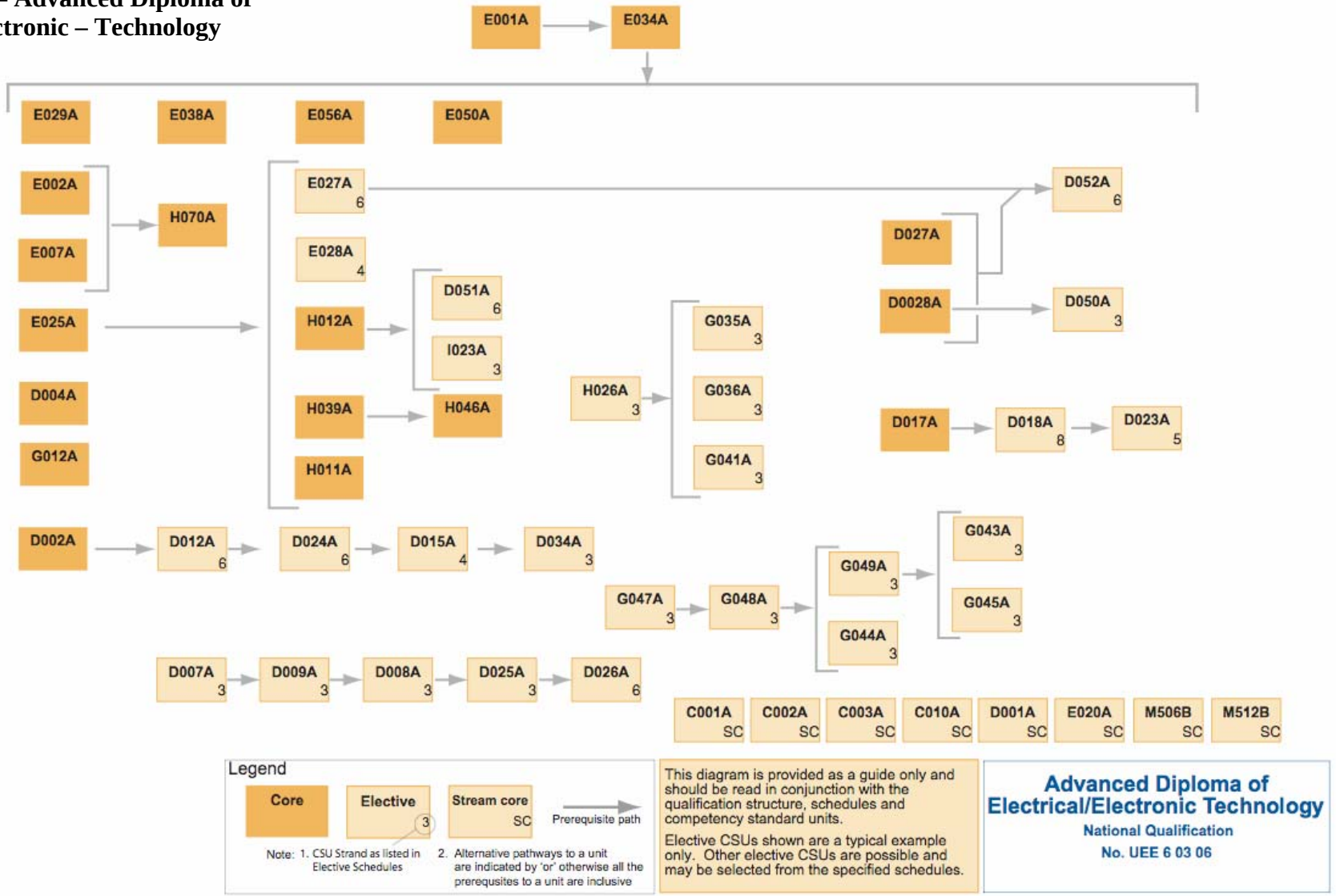
Flowchart 21 – Advanced Diploma of Electrical/Electronic – Technology



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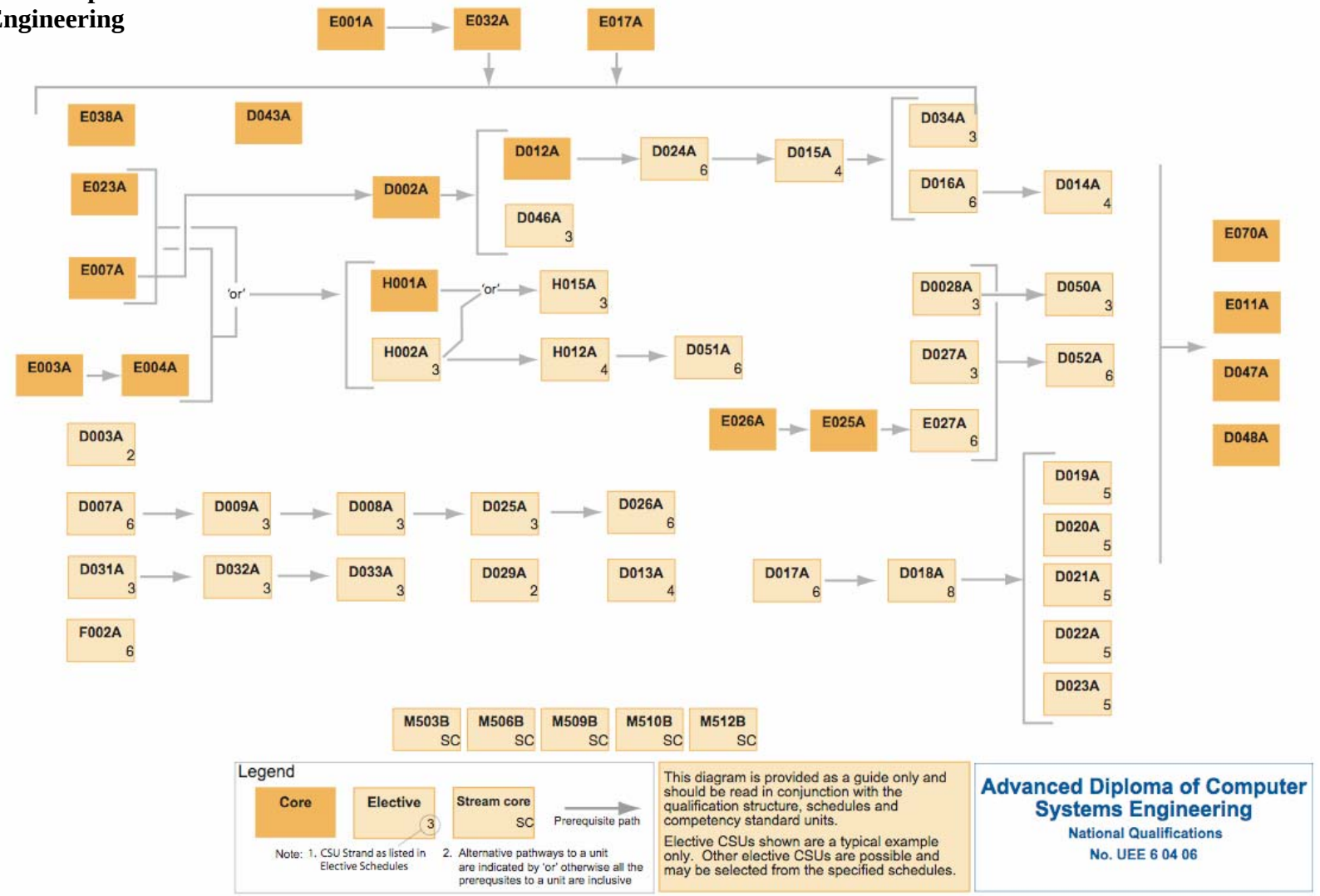
Flowchart 22 – Advanced Diploma of Computer Systems Engineering



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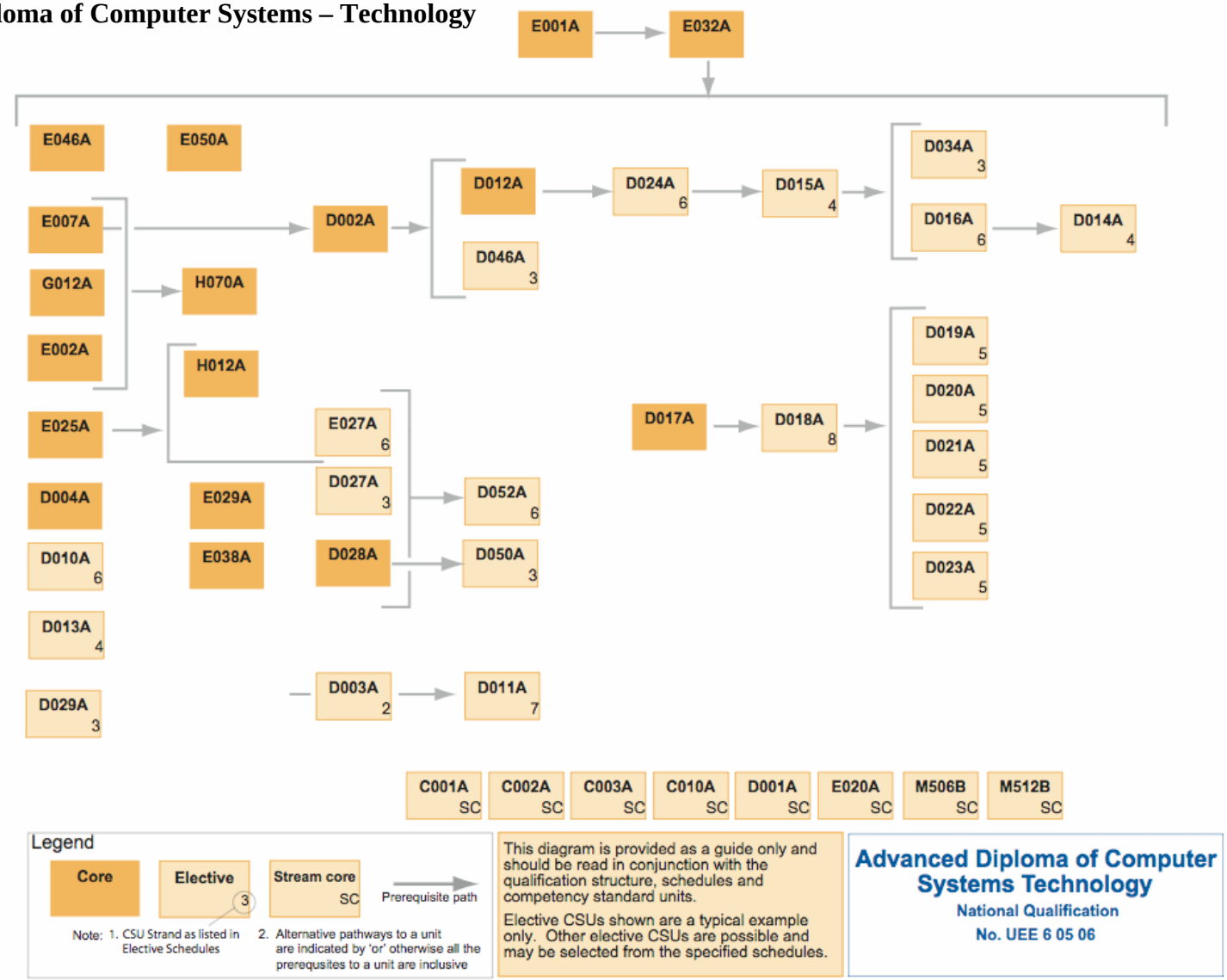
Flowchart 23 – Advanced Diploma of Computer Systems – Technology



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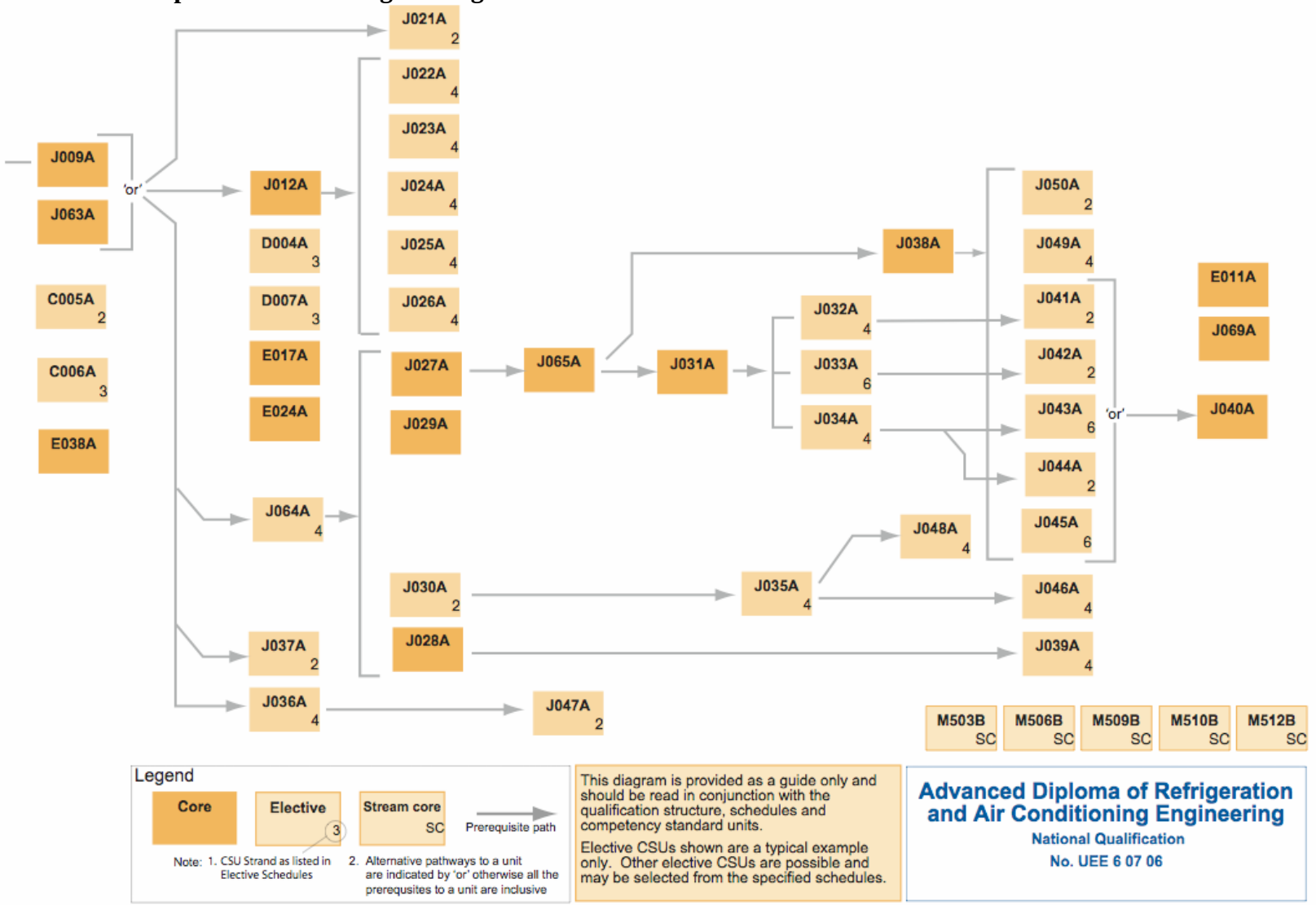
Flowchart 24 – Advanced Diploma of RAC Engineering



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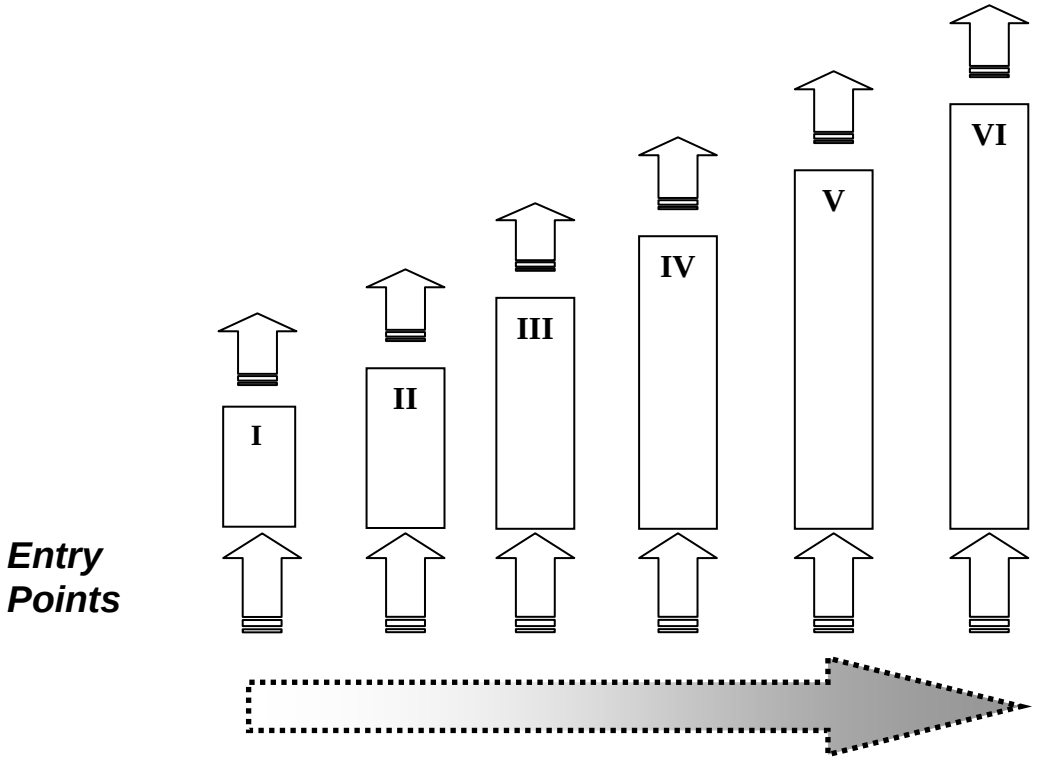
Qualification Pathways

This Training Package provides open entry at each of the AQF levels.



For more information on the latest Training Package vocational standards qualifications and qualification pathways visit or contact ElectroComms and EnergyUtilities Industry Skills Council Ltd trading as EE-Oz Training Standards at www.ee-oz.com.au

1.1.7 Maintenance of Qualifications

The Electrotechnology Industry which developed the Qualifications structure was will contribute to its maintenance. The Qualifications structure must be maintained so that it reflects the ongoing needs of the industry sector and responds in a timely manner to changed technologies, work organisation, skills development and related circumstances.

Responsibility for maintaining of the Qualifications structure is shared by the parties who constitute the sector.

- Qualification maintenance will be coordinated and managed by EE-Oz Training Standards in its role as a declared Industry Skills Council for ElectroComms and EnergyUtilities
- Suggestions and proposals for changes from all parties are welcome. These should be documented and submitted to the Industry Skills Council.

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1.1.8 The Australian Qualification Framework

A brief overview of the Australian Qualifications Framework (AQF) follows. For a full explanation of the AQF see the *AQF Implementation Handbook*, 3rd Edition 2002 or any replacement. It can be downloaded from the Australian Qualifications Advisory Board (AQFAB) website (www.aqf.edu.au) or obtained in a hard copy by contacting AQFAB on (03) 9639 1606 or by emailing AQFAB on aqfab@curriculum.edu.au.

The AQF provides a comprehensive, nationally consistent framework for all qualifications in post-compulsory education and training in Australia. In the vocational education and training (VET) sector it contributes to national consistency for all trainees, learners, employers and providers by enabling national recognition of qualifications and Statements of Attainment.

Training Packages in the VET sector must comply with the titles and guidelines of the AQF. Endorsed Training Packages provide a unique title for each AQF qualification, which must always be reproduced accurately and is not to be copied in other jurisdictions or varied in any way.

Qualifications

Training Packages can incorporate the following six AQF qualifications:

- Certificate I in …
- Certificate II in …
- Certificate III in …
- Certificate IV in …
- Diploma of …
- Advanced Diploma of …

On completion of the requirements defined in the Training Package, an RTO may issue the respective nationally recognised AQF qualification. Issuing of AQF qualification(s) must comply with the advice provided in the *AQF Implementation Handbook* and the *Australian Quality Training Framework Standards* (AQTF) for RTOs, particularly Standard 10.

Statement of Attainment

Where an AQF qualification is partially achieved through the achievement of one or more endorsed competency standard units, an RTO may issue a Statement of Attainment. Issuance of Statements of Attainment must comply with the advice provided in the AQF Implementation Handbook and the Australian Quality Training Framework Standards (AQTF) for RTOs, particularly Standard 10.

Under the Standards for Registered Training Organisations, RTOs must recognise the achievement of competencies as recorded on a qualification or Statement of Attainment issued by other RTOs. Given this, recognised competencies can progressively build towards a full AQF qualification.

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AQF Guidelines and Learning Outcomes

The *AQF Implementation Handbook* provides a comprehensive guideline for each AQF qualification. A summary of the learning outcome characteristics and their distinguishing features for each VET related AQF qualification is provided below.

Certificate I

Characteristics of Learning Outcomes

Knowledge and skills to perform a defined range of routine and predictable activities.

Applications may include a variety of employment-related skills, including preparatory access and participation skills, broad based induction skills and/or specific workplace skills. They may also include participation in a team or work group.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate knowledge by recall in a narrow range of areas
- demonstrate basic practical skills, such as the use of relevant tools
- perform a sequence of routine tasks given clear direction
- receive and pass on messages/information?

Certificate II

Characteristics of Learning Outcomes

Knowledge and skills to perform a prescribed range of functions in clearly defined contexts with limited complexity in the range of operations, and involving known routines and procedures.

Applications may include some complex or non-routine activities involving individual responsibility or autonomy and/or collaboration with others as part of a group or team, and some accountability for the quality of outcomes.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate basic operational knowledge in a moderate range of areas
- apply a defined range of skills
- apply known solutions to a limited range of predictable problems
- perform a range of tasks where choice between a limited range of options is required
- assess and record information from varied sources
- take limited responsibility for own outputs in work and learning?

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Certificate III

Characteristics of Learning Outcomes

Knowledge and competencies to perform a defined range of skilled operations, within a range of broader related activities and involving known routines, methods and procedures. Performance would occur across a range of roles and in a variety of contexts. Some discretion and judgement would be required in the selection of equipment, services or contingency measures, within known time constraints, and with some complexity in the extent and choice of options available.

Application will involve selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specified problems.

Applications may involve some responsibility for others. Participation in teams including group or team coordination may be involved.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate some relevant theoretical knowledge
- apply a range of well developed skills
- apply known solutions to a variety of predictable problems
- perform processes that require a range of well developed skills where some discretion and judgement is required
- interpret available information, using discretion and judgement
- take responsibility for own outputs in work and learning
- take limited responsibility for the output of others?

Certificate IV

Characteristics of Learning Outcomes

Knowledge and competencies covering a broad range of activities performed in a variety of complex and non-routine contexts. Leadership and guidance are involved in organising activities. in the application and planning of the skills and in contributing to technical solutions in non-routine or contingency situations.

Applications will include evaluating and analysing current practices, developing new criteria and procedures for current practices, as well as responsibility for and limited organisation of others.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate understanding of a broad knowledge base incorporating some theoretical concepts
- apply solutions to a defined range of unpredictable problems
- identify and apply skill and knowledge areas to a wide variety of contexts,

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with depth in some areas
- identify, analyse and evaluate information from a variety of sources
- take responsibility for own outputs in relation to specified quality standards
- take limited responsibility for the quantity and quality of the output of others?

Diploma

Characteristics of Learning Outcomes

Planning and initiating alternative approaches to the application of knowledge and skills across a broad range of contexts/situations, eg technical and/or management, evaluation and coordination.

Performance involves self directed application of knowledge and skills, in substantial depth in some areas, and judgement is required in planning and selecting appropriate equipment, services and techniques for self and others.

Applications involve participation in development of strategic initiatives as well as personal responsibility and autonomy in performing complex technical operations or organising others. It may involve participation in teams, including teams concerned with planning and evaluation functions. Group or team coordination may be involved.

The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.

Distinguishing Features of Learning Outcomes

Do the competencies or learning outcomes enable an individual with this qualification to:
- demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas
- analyse and plan approaches to technical problems or management requirements
- transfer and apply theoretical concepts and/or technical or creative skills to a range of situations
- evaluate information, using it to forecast for planning or research purposes
- take responsibility for own outputs in relation to broad quantity and quality parameters
- take some responsibility for the achievement of group outcomes?

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Advanced Diploma

Characteristics of Learning Outcomes

Analysis, design, planning, execution and evaluation across a range of technical and/or management functions, including development of new criteria or applications or knowledge or procedures.

The application of a significant range of fundamental principles and complex techniques across a wise and often unpredictable variety of contexts in relation to either varied or highly specific functions. Contribution to the development of a broad plan, budget or strategy is involved and accountability and responsibility for self and others in achieving the outcomes is involved.

Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to products, services, operations or procedures. The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.

Distinguishing Features of Learning Outcomes

Do the competencies or learning outcomes enable an individual with this qualification to:

- demonstrate understanding of specialised knowledge with depth in some areas
- analyse, diagnose, design and execute judgements across a broad range of technical or management functions
- generate ideas through the analysis of information and concepts at an abstract level
- demonstrate a command of wide ranging, highly specialised technical, creative or conceptual skills
- demonstrate accountability for personal outputs within broad parameters
- demonstrate accountability for personal and group outcomes within broad parameters?

1.1.9 Electrotechnology Industry Qualifications

On the following pages is a description of each Electrotechnology Industry qualification and its application, as well as possible employment outcomes.

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Electrotechnology Industry Qualifications		
Code	**Certificate I Qualifications**	**Descriptions and Scopes**
UEE10106	Certificate I in ElectroComms Skills	Perform basic work activities, including identifying and using a range of components, accessories, materials, tools, equipment, technologies, and customs for carrying out work in the Electrotechnology-Communications Industry. Sectors in the industry are electronics, electrical, communications including telecommunications – voice, data, video and information technology, computer systems, instrumentation, lifts, refrigeration and air conditioning, and renewable/sustainable energy.

Electrotechnology Industry Qualifications		
Code	**Certificate II Qualifications**	**Descriptions and Scopes**
UEE20106	Certificate II in Air-conditioning Split Systems	The installation, commissioning and de-commissioning of single head wall hung split air conditioning systems to a prescribed routine. The maximum plant capacity for each system does not exceed 18 kWr (the letter 'r' denotes 'refrigeration' or cooling capacity not electrical input power). This qualification does not cover the competencies required for service, repair, maintenance, diagnostic/fault finding and electrical work or the safe and proper installation of commercial refrigeration and air conditioning plant and equipment. Note: The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 and the Ozone Protection and Synthetic Gas Management Regulations apply to this qualification. Prior to planning

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Electrotechnology Industry Qualifications		
Code	**Certificate II Qualifications**	**Descriptions and Scopes**
		the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included.
	Certificate II in Business Equipment Servicing	Base level servicing and maintenance of photocopiers, fax machines etc
UEE20306	Certificate II in Electrotechnology Business Support	Maintain documentation, process purchase orders, answer customer inquiries etc
UEE20406	Certificate II in Winding and Assembly	Wind, place and connect coils for small armatures, transformers and solenoids following prescribed routines.
UEE20506	Certificate II in Computer Assembly and Repair	Select components and assemble computer to customer specifications and carry out routine hardware repairs (generally by replacement) of known faulty components following prescribed routines.
UEE20606	Certificate II in Custom Electronics Assembly and Set-up	Assemble and set up of surround sound, home theatre systems. It covers the scope of CEDIA certification level 1.
UEE20706	Certificate II in Data and Voice Communications	Select, assemble, set up and maintain simple equipment and systems to a prescribed routine Certification of telecommunication cabling in buildings and premises. It includes ACA requirements for Open cabler registration.
	Certificate II in Electrical Wholesaling	Take and process orders, check and accept stock deliveries, maintain shelf stock and service customers.
UEE20906	Certificate II in Electronic Assembly	Select components, set up and operate component placement machines and carry out rework to a prescribed routine.
UEE21006	Certificate II in Fire Alarms Servicing	Select, assemble and set up of base level fire protection systems in domestic and commercial premises.

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Electrotechnology Industry Qualifications		
Code	**Certificate II Qualifications**	**Descriptions and Scopes**
UEE21106	Certificate II in Gaming Machines Servicing	Base level servicing and set up of gaming machines to a prescribed standard in registered clubs and hotels and dedicated games machines in electronic game venues.
UEE21206	Certificate II in Antennae Equipment	Select, assemble, connect and set up TV and radio reception antennae and multiple antenna outlets in buildings and premises
UEE21306	Certificate II in Remote Area Essential Service	Select, assemble, set up and maintain simple equipment and systems following prescribed routines reformat existing units
UEE21406	Certificate II in Remote Area Power Supply Maintenance	Routine maintenance of remote area power supplies consisting of battery banks, generator sets, photovoltaic arrays and wind generators – primarily for use by, but not exclusive to, indigenous communities.
UEE21506	Certificate II in Renewable Energy	Select, assemble, set up and maintain simple equipment and systems to a prescribed routine
UEE21606	Certificate II in Security Assembly and Setup	Select, assemble and set up of wired and wireless base level security systems following prescribe routines.
UEE21706	Certificate II in Technical Support	Collect/receive and store stock at work sites, set up and store equipment and tools, assist in installation, fault finding, maintenance and repair activities.
UEE21806	Certificate II in Appliance Servicing – Refrigerants	Service refrigerant gas components of appliances following prescribed routines. It includes regulatory requirements for purchasing and handling refrigerants. Note: The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 may apply to this qualification. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included.

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Electrotechnology Industry Qualifications		
Code	**Certificate II Qualifications**	**Descriptions and Scopes**
UEE21906	Certificate II in Electronics	Select, assemble, set up and maintain electronic devices following prescribed routines.
UEE22006	Certificate II in Electrotechnology (Career Start)	Work entry program providing grounding in safety and basic skills and knowledge for work in any Electrotechnology discipline.
UEE22106	Certificate II in Sustainable Energy (Career Start)	Work entry program providing grounding in safety and adopted and emerging sustainable energy systems.

Electrotechnology Industry Qualifications		
Code	**Certificate III Qualifications**	**Descriptions and Scopes**
UEE30106	Certificate III in Business Equipment	Install, set up, test, fault find, repair and maintain photocopiers, fax machines etc
UEE30206	Certificate III in Computer Equipment	Select, install, set up, test, fault find, repair and maintain computer equipment for data storage, personal computer and networks, measurement/analysis and control.
UEE30306	Certificate III in Custom Electronics Installations	Select, install, set up and test surround sound, home theatre and integration aspects for 'intelligent houses'. It covers the scope of CEDIA certification level 2
UEE30406	Certificate III in Data and Voice Communications	Select, install, set up, test, fault find, repair and maintain telecommunications and high performance data services in buildings and premises. It includes ACA requirements for Open Cabler Registration.

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Electrotechnology Industry Qualifications		
Code	**Certificate III Qualifications**	**Descriptions and Scopes**
UEE30506	Certificate III in Appliance Servicing	Set up, service and repair electrical, gas, and refrigerated appliances. Note: The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 may apply to this qualification. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included.
UEE30606	Certificate III in Electrical Machine Repair	Motor, transformer and control gear overhaul and repair, including rewinding
UEE30706	Certificate III in Switchgear and Control Gear	Construction, assembly and wiring of switchboards and control panels
UEE30806	Certificate III in Electrotechnology Electrician	Select, install, set up, test, fault find, repair and maintain electrical systems and equipment in building and premises. It includes ERAC requirements for an 'Electrician's licence'.
UEE30906	Certificate III in Electronics and Communications	Select, install, set up, test, fault find, repair and maintain electronic equipment and devices at component/sub-assembly level with options in communications, audio, video and TV, personal computer and networks, security and custom installations
UEE31006	Certificate III in Fire Protection Control	Installation and set up of fire protection systems in multiple, commercial and industrial premises.
UEE31106	Certificate III in Gaming Electronics	Select, install, set up, test, fault find, repair and maintain gaming machines used in registered clubs and hotels and dedicated games machines used in electronic game venues.
UEE31206	Certificate III in Instrumentation and Control	Select, install, set up, test, fault find, repair and maintain systems and devices for measurement and recording of physical/chemical phenomenon and related process control.

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Electrotechnology Industry Qualifications		
Code	**Certificate III Qualifications**	**Descriptions and Scopes**
UEE31306	Certificate III in Refrigeration and Air-conditioning	Select components, install, set up, test, fault find, repair and maintain refrigeration systems and equipment that apply to food storage and preservation and air conditioning and air distribution equipment in buildings and premises. It includes regulatory requirements for purchasing and handling refrigerants.
UEE31406	Certificate III in Security Equipment	Installation and pre-commissioning set up of wired and wireless security systems in multiple, commercial industrial premises.
UEE31506	Certificate III in Rail – Communications and Networks	Select, install, commission, fault find and maintain radio and dedicated telecommunications networks in rail equipment.
	Certificate III in Wireless Communications	*Pending*
UEE31706	Certificate III in Hazardous areas – Electrician	Select, install, set up, test, fault find, repair and maintain electrical systems and equipment in building and premises. It includes ERAC requirements for an 'Electrician's licence' and competencies to work with explosion-protected electrical equipment in areas where flammable materials are present and designated as hazardous areas.
UEE31806	Certificate III in Hazardous areas – Instrumentation	Select, install, set up, test, fault find, repair and maintain systems and devices for measurement and recording of physical/chemical phenomenon and related process control. It includes competencies to a work with explosion-protected instrumentation/control equipment in areas where flammable materials are present and designated as hazardous areas.
UEE31906	Certificate III in Explosion-protected equipment overhaul	Motor, transformer and control gear overhaul and repair including rewinding and the overhaul of explosion-protected equipment

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Electrotechnology Industry Qualifications		
Code	**Certificate IV Qualifications**	**Descriptions and Scopes**
UEE40106	Certificate IV in Computer Systems	Select, install, commission, fault find and maintain data processing, communications and control aspects of systems used for monitoring and control of systems for access, surveillance, safety and effective operation of manufacturing, buildings, structures, premises, precincts and personal computer and networks
UEE40206	Certificate IV in Electrical – Data and Voice Communications	Select, install, commission, fault find and maintain electrical and communications systems and equipment in building and premises. It includes ERAC requirements for an 'Electrician's licence' and ACA requirements for Open cabler registration.
UEE40306	Certificate IV in Electrical Installation Inspection and Audits	Mandatory and contractual inspections of electrical systems and auditing of entities for compliance with electrical safety requirements
UEE40406	Certificate IV in Electrical – Instrumentation	Select, install, commission, fault find and maintain electrical and instrumentation equipment in buildings and premises and instrumentation systems and core instrumentation equipment for process and control. It includes ERAC requirements for an 'Electrician's licence'.
UEE40506	Certificate IV in Electrical – Air-conditioning Systems	Select, install, commission, fault find and maintain electrical systems and equipment in buildings and premises and core refrigeration/air conditioning equipment. It includes ERAC requirements for an 'Electrician's licence' and regulatory requirements for purchasing and handling refrigerants.
UEE40606	Certificate IV in Electrotechnology – Systems Electrician	Select, install, commission, fault find and maintain electrical systems and equipment with options, typically in explosion protection; electrical machines; electrical inspection; safety auditing; contracting; lifts; energy supply/distribution

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Electrotechnology Industry Qualifications		
Code	**Certificate IV Qualifications**	**Descriptions and Scopes**
UEE40706	Certificate IV in Electronics and Communications	Select, install, commission, fault find and maintain audio/video and data systems, computer and network hardware, security systems, wireless and communications systems and electronic aspects of medical equipment
UEE40806	Certificate IV in Electrical – Fire Protection Control Systems	Select, install, commission, fault find and maintain fire protection control systems in buildings. It includes ERAC requirements for an 'Electrician's licence'.
UEE40906	Certificate IV in Industrial Electronics and Control	Select, install, commission, fault find and maintain equipment and systems for the control of plant, machines and processes
UEE41006	Certificate IV in Energy Management and Control	Select, install, commission, fault find and maintain equipment and systems for energy management, plant and other services in building, premises and precincts
UEE41106	Certificate IV in Electrical – Lift Systems	Select, install, commission, fault find and maintain of lifts, escalators and associated equipment. It includes ERAC requirements for an 'Electrician's licence'.
UEE41206	Certificate IV in Electrical – Rail Signalling	Select, install, commission, fault find and maintain rail signalling equipment and systems. It includes ERAC requirements for an 'Electrician's licence'.
UEE41306	Certificate IV in Refrigeration and Air-conditioning Servicing	High level fault diagnosis and rectification, commissioning and maintenance of refrigeration systems and equipment that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications. It includes regulatory requirements for purchasing and handling refrigerants.

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Electrotechnology Industry Qualifications		
Code	**Certificate IV Qualifications**	**Descriptions and Scopes**
UEE41406	Certificate IV in Refrigeration and Air-conditioning Systems	Develop controls and monitor and adjust components to obtain effective operation of refrigeration systems that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications
UEE41506	Certificate IV in Video and Audio Systems	Service high end audio, video, display systems and HDTV
UEE41606	Certificate IV in Renewable Energy	Select, install, commission, fault find and maintain multiple renewable energy sources and equipment for control of energy use
UEE41706	Certificate IV in Rail – Communications and Network Systems	Select, install, commission, fault find and maintain radio and dedicated telecommunications networks in rail systems
UEE41806	Certificate IV in Hazardous areas	Select, install, commission, fault find and maintain electrical and equipment in buildings and premises or instrumentation systems and core instrumentation equipment for process and control Note: Includes ERAC requirements for an 'Electrician's licence' and competencies to work with explosion-protected electrical or instrumentation/control equipment in areas where flammable materials are present and designated as hazardous areas.

Electrotechnology Industry Qualifications		
Code	**Diploma Qualifications**	**Descriptions and Scopes**
UEE50106	Diploma of Computer Systems Engineering	Develop, select, install, commission and maintain computer equipment, networks and systems

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Electrotechnology Industry Qualifications		
UEE50206	Diploma of Electrical and Instrumentation	Select, install, commission, maintain and diagnose faults/malfunctions on electrical, instrumentation and control equipment and systems. It includes ERAC requirements for an 'Electrician's licence'.
UEE50306	Diploma of Electrical and Refrigeration and Air-conditioning	Select, install, commission, maintain and diagnose faults/malfunctions on refrigeration systems and equipment that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications and associated electrical systems. It includes ERAC requirements for an 'Electrician's licence' and regulatory requirements for purchasing and handling refrigerants.
UEE50406	Diploma of Electrical Engineering	Develop, select, commission, maintain and diagnose faults/malfunctions on advanced electrical equipment and systems. It includes ERAC requirements for an 'Electrician's licence'.
UEE50506	Diploma of Electronics and Communications Engineering	Develop, select, commission, maintain and diagnose faults/malfunctions of electronic components/sub-assemblies, apparatus and systems
UEE50606	Diploma of Refrigeration and Air-conditioning Engineering	Develop systems, select equipment, and commission, maintain and diagnose faults/malfunctions of refrigeration systems and equipment that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications
UEE50706	Diploma of Renewable Energy Engineering	Develop, select, commission, maintain and diagnose faults/malfunctions on large scale renewable energy equipment and systems
UEE50806	Diploma of Research and Development	Assist professional in planning, research and development of electrotechnology products and services

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Electrotechnology Industry Qualifications		
UEE50906	Diploma of Industrial Electronics and Control Engineering	Develop, select, commission, maintain and diagnose faults/malfunctions of equipment and systems for the monitoring and control of plant, machines and processes

Electrotechnology Industry Qualifications		
Code	**Advanced Diploma Qualifications**	**Descriptions and Scopes**
UEE60106	Advanced Diploma of Electrical Engineering	Design and validate/evaluate electrical equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales
UEE60206	Advanced Diploma of Electronics and Communications Engineering	Design and validate/evaluate electronics and communications equipment and systems, computer and network based systems, manage risk, estimate and manage projects and provide technical advice/sales
UEE60306	Advanced Diploma of Electrical/Electronic – Technology	Prepare to design and validate/evaluate electrical or electronics and communication equipment and systems and provide technical advice/sales.
UEE60406	Advanced Diploma of Computer Systems Engineering	Design, install/validate/evaluate and administer computer networks and systems, manage risk, estimate and manage projects and provide technical advice/sales
UEE60506	Advanced Diploma of Computer Systems – Technology	Prepare to design, install/validate/evaluate and administer computer networks and systems and provide technical advice/sales
UEE60606	Advanced Diploma of Industrial Electronics and Control Engineering	Design and validate/evaluate control equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales

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Electrotechnology Industry Qualifications		
Code	**Advanced Diploma Qualifications**	**Descriptions and Scopes**
UEE60706	Advanced Diploma of Refrigeration and Air-conditioning Engineering	Design and validate/evaluate refrigeration and air conditioning equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales
UEE60806	Advanced Diploma of Refrigeration and Air-conditioning – Technology	Prepare to design and validate/evaluate refrigeration and air conditioning equipment and systems and provide technical advice/sales
UEE60906	Advanced Diploma of Renewable Energy Engineering	Design and validate/evaluate renewable energy equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales
UEE61006	Advanced Diploma of Renewable Energy – Technology	Prepare to design and validate/evaluate renewable energy equipment and systems and provide technical advice/sales
UEE61106	Advanced Diploma of Automated Systems Maintenance Engineering	Monitor/validate/evaluate automated equipment and systems, manage risk, develop and manage maintenance programs, and provide technical advice
UEE61206	Advanced Diploma of Engineering – Explosion protection	Design and validate/evaluate electrical or control equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales. It includes competencies in explosion-protection necessary for areas where flammable materials are present.

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The structure, composition and range of the qualifications and the requirements necessary for obtaining them, allow employers and employees to select the qualification and units appropriate for their skill and work organisation requirements.

The qualification structures that follow must be read in conjunction with Volume 1 Part 2 Competency Standards, Unit Construction. The structure of the qualifications includes the Competency Standard Units relevant to the outcome of the particular qualification. It does not include prerequisite competency standard units.

Prerequisite units

Any prerequisite competency standard unit not listed in a qualification framework attracts no weighting value, but must be acquired.

In the delivery of prerequisite units, training and formative assessments may be delivered for all or part of the sequence of Competency Standard Units concurrently and/or at a different stage to the final assessment of each unit. However, the final assessment and judgement for attributing competence for each unit is to follow the prerequisite sequence.

For more information see the sections Important Note to Users, Table of Index of Units and Prerequisite requirements, and Relationship of units to the former Training Package.

Qualifications Structures

Electrotechnology qualification structures are detailed in the following pages.

Certificate I

Certificate I in ElectroComms Skills

National Qualification Number UEE10106

Scope

This qualification provides competencies to perform basic work activities, including identifying and using a range of components, accessories, materials, tools, equipment, technologies, and customs for carrying out work in the Electrotechnology – Communications Industry. Sectors in the industry are electronics, electrical, communications, including telecommunications – voice, data, video and information technology, computer systems, instrumentation, lifts, refrigeration and air conditioning, and renewable/sustainable energy.

Note: Sectors in the industry are electronics, electrical, communications including telecommunications – voice, data, video and information technology, computer systems, instrumentation, lifts, refrigeration and air conditioning, and renewable/sustainable energy.

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Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units	
All Core Competency Standard Units to be achieved	
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE040A	Identify and select materials for electrotechnology work activities
UEENEEE048A	Carry out routine work activities in an electrotechnology environment

Stream Core Competency Standard Units	
At least 1 of the following Competency Standard Units to be achieved	
UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers

Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 2 as specified.

Note:

1. In selecting elective units considerations to career planning advice should be given to units that form part a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II

Certificate II in Air-conditioning Split Systems

National Qualification Number UEE20106

Scope

The installation, commissioning and de-commissioning of single head wall hung split air conditioning systems to a prescribed routine. The maximum plant capacity for each system does not exceed 18 kWr (the letter 'r' denotes 'refrigeration' or cooling capacity not electrical input power). This qualification does not cover the competencies required for service, repair, maintenance, diagnostic/fault finding and electrical work or the safe and proper installation of commercial refrigeration and air conditioning plant and equipment.

Note:

The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 and the Ozone Protection and Synthetic Gas Management Regulations apply to this qualification. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE036A	Document occupational hazards and risks in refrigeration and Air-conditioning
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEJ002A	Prepare refrigeration tubing and fittings
UEENEEJ003A	Determine the basic operating conditions of vapour compression systems

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Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEJ005A	Position, assemble and start up split air conditioning systems
UEENEEJ072A	Recover, pressure and leak test, evacuate and charge refrigerants — split air conditioning systems

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 2 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Business Equipment Servicing

National Qualification Number UEE2 02 06

Scope

This qualification provides competencies in base level servicing and maintenance of photocopiers, fax machines etc.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH003A	Carry out routine repairs to business equipment

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 2 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Electrotechnology Business Support

National Qualification Number RESERVED

Scope

This qualification provides competencies to maintain documentation, process purchase orders, answer customer inquiries etc.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

To be developed (TBD) as part of continuous improvement

TBD as part of continuous improvement

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Stream Core Competency Standard Units

At least <-- x -- insert appropriate number> of the following Competency Standard Units to be achieved

TBD as part of continuous improvement

Elective Competency Standard Units

In accordance with Schedule <insert Schedule Number>, which forms an integral part of this qualification, achieve a Unit Strand Total of at least <--x--insert appropriate number> as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Winding and Assembly

National Qualification Number UEE2 04 06

Scope

This qualification provides competencies to wind, place and connect coils for small armatures, transformers and solenoids following prescribed routines.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG050A	Wind coils
UEENEEG051A	Place and connect coils

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 2 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Computer Assembly and Repair

National Qualification Number UEE2 05 06

Scope

This qualification provides competencies to select components and assemble computer to customer specifications and carry out routine hardware repairs (generally by replacement) of known faulty components following prescribed routines.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEED002A	Assemble, set up and test personal computers
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE032A	Document occupational hazards and risks in computer systems
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH001A	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 1 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Custom Electronics Assembly and Set-up

National Qualification Number UEE2 06 06

Scope

This qualification provides competencies to assemble and set up of surround sound, home theatre systems. It covers the scope of CEDIA certification level 1.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH006A	Assemble and set up fixed audio/video components and systems in buildings and premises

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 1 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Data and Voice Communications

National Qualification Number UEE2 07 06

Scope

This qualification provides competencies to select, assemble, set up and maintain simple equipment and systems to a prescribed routine Certification of telecommunication cabling in buildings and premises. It includes ACA requirements for Open cabler registration.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEF002A	Lay and connect cables for multiple access to telecommunication services

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEE020A Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 0 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

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Certificate II in Electrical Wholesaling

National Qualification Number RESERVED

Scope

This qualification provides competencies to take and process orders, check and accept stock deliveries, maintain shelf stock and service customers.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

To be developed (TBD) as part of continuous improvement

To be developed (TBD) as part of continuous improvement

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Stream Core Competency Standard Units

At least <-- x -- insert appropriate number> of the following Competency Standard Units to be achieved

To be developed (TBD) as part of continuous improvement

Elective Competency Standard Units

In accordance with Schedule <insert Schedule Number>, which forms an integral part of this qualification, achieve a Unit Strand Total of at least <--x--insert appropriate number> as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Electronic Assembly

National Qualification Number UEE2 09 06

Scope

This qualification provides competencies to select components, set up and operate component placement machines and carry out rework to a prescribed routine. It includes selecting components, assembling electronic subsystems and carrying out reworks to a prescribed routine.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEA001A	Assemble electronic apparatus
UEENEEA002A	Select electronic components
UEENEEA004A	Rework electronic sub assemblies
UEENEEA005A	Conduct functional and quality tests on assembled electronic apparatus
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 2 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Fire Alarms Servicing

National Qualification Number UEE2 10 06

Scope

This qualification provides competencies to select, assemble, set up and test base level fire protection systems in domestic and commercial premises.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEED005A	Enter and verify operating instructions in microprocessor equipped devices
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH061A	Position and terminate fire detection and warning system apparatus
UEENEEH062A	Verify compliance and functionality of fire protection installations

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEE020A Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 2 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Gaming Machines Servicing

National Qualification Number UEE2 11 06

Scope

This qualification provides competencies in base level servicing and set up of gaming machines to prescribed standards in registered clubs and hotels and dedicated games machines in electronic game venues.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH009A	Set up and test gaming/games equipment

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Antennae Equipment

National Qualification Number UEE2 12 06

Scope

This qualification provides competencies to select, assemble, connect and set up TV and radio reception antennae and multiple antenna outlets in buildings and premises.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH008A	Assemble and erect reception antennae and signal distribution equipment

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 2 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Remote Area Essential Service

National Qualification Number UEE2 13 06

Scope

This qualification provides competencies to select, assemble, set up and maintain simple equipment and systems following prescribed routines.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEK017A	Maintain and repair facilities associated with remote area essential services operation

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 6 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Remote Area Power Supply Maintenance

National Qualification Number UEE2 14 06

Scope

This qualification provides competencies in routine maintenance of remote area power supplies consisting of battery banks, generator sets, photovoltaic arrays and wind generators. Primarily for use by, but not exclusive to, indigenous communities.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEK001A	Maintain safety and tidiness of remote area power supply (RAPS) systems
UEENEEK002A	Work safely with remote area power supply (RAPS) systems

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 11 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Renewable Energy

National Qualification Number UEE2 15 06

Scope

This qualification provides competencies to select, assemble, set up and maintain simple equipment and systems to a prescribed routine.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring/cabling and terminate accessories for extra-low voltage circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEK023A	Carry out basic repairs to renewable energy apparatus by replacement of components
UEENEEK024A	Assemble and set up photovoltaic apparatus for a domestic dwelling
UEENEEK025A	Solve basic problems in photovoltaic energy apparatus

Stream Core Competency Standard Units

At least one of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work

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Stream Core Competency Standard Units

At least one of the following Competency Standard Units to be achieved

UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 2 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 0 (nil for this qualifications) as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Security Assembly and Set-up

National Qualification Number UEE2 16 06

Scope

This qualification provides competencies to select, assemble and set-up of wired and wireless base level security systems following prescribe routines.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEED005A	Enter and verify operating instructions in microprocessor equipped devices
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH050A	Assemble and set up basic wired and wireless security systems

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEE020A Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 1 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Technical Support

National Qualification Number UEE2 17 06

Scope

This qualification provides competencies to collect/receive and store stock at work sites, set up and store equipment and tools, assist in installation, fault finding, maintenance and repair activities.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE022A	Carry out preparatory electrotechnology work activities
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG011A	Carry out basic repairs to electrical apparatus

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 2 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Appliance Servicing – Refrigerants

National Qualification Number UEE2 18 06

Scope

This qualification provides competencies to handle and use refrigerants while servicing self contained refrigeration and air conditioning appliances following prescribed routines. It includes regulatory requirements for purchasing and handling refrigerants.

Note: The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 may apply to this qualification. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE036A	Document occupational hazards and risks in refrigeration and air conditioning
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEJ002A	Prepare refrigeration tubing and fittings
UEENEEJ003A	Determine the basic operating conditions of vapour compression systems
UEENEEJ062A	Recover, pressure and leak test, evacuate and charge refrigerants appliance

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 3 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Electronics

National Qualification Number UEE2 19 06

Scope

This qualification provides competencies to select, assemble, set up and maintain electronic devices following prescribed routines.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC008A	Receive and store materials and equipment for electrotechnology work
UEENEEC010A	Deliver a service to customers
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 6 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Electrotechnology (Career Start)

National Qualification Number UEE2 20 06

Scope

This qualification covers competencies for work entry program providing grounding in safety and basic skills and knowledge for work in any electrotechnology discipline.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE040A	Identify and select materials for electrotechnology work activities
UEENEEE041A	Use routine equipment/plant/technologies in an electrotechnology environment
UEENEEE048A	Carry out routine work activities in an electrotechnology environment

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 6 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate II in Sustainable Energy (Career Start)

National Qualification Number UEE2 21 06

Scope

This qualification covers competencies for work entry program providing grounding in safety and basic skills and knowledge for work in any electrotechnology discipline.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEK012A	Provide basic sustainable energy solutions for energy reduction in domestic premises
UEENEEK013A	Apply sustainable energy practice in daily activities
UEENEEK014A	Promote sustainable energy practice in the community

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedule 2 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 6 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III

Certificate III in Business Equipment

National Qualification Number UEE3 01 06

Scope

This qualification provides competencies to install, set up, test, fault find, repair and maintain photocopiers, fax machines etc.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units	
All Core Competency Standard Units to be achieved	
UEENEEC013A	Participate in business equipment work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH003A	Carry out routine repairs to business equipment
UEENEEH007A	Carry out repairs of predictable faults in general electronic apparatus
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039A	Solve problems in basic amplifier circuits
UEENEEH021A	Find and repair faults in high volume office equipment

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 6 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Computer Equipment

National Qualification Number UEE3 02 06

Scope

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain computer equipment for data storage, personal computer and networks, measurement/analysis and control.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC014A	Participate in computer equipment work and competency development activities
UEENEED002A	Assemble, set up and test personal computers
UEENEED012A	Support computers hardware and software
UEENEED043A	Install and configure a computer operating system and software
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE032A	Document occupational hazards and risks in computer systems
UEENEEH001A	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH015A	Solve problems in microprocessor based hardware and firmware

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 13 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Custom Electronics Installations

National Qualification Number UEE3 03 06

Scope

This qualification provides competencies to select, install, set up and test surround sound, home theatre and integration aspects for 'intelligent houses'. It covers the scope of CEDIA certification level 2

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC015A	Participate in custom electronic installations work and competency development activities
UEENEED031A	Develop and validate basic integrated systems
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE019A	Solve problems in multiple path a.c. circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEH004A	Set up and test audio/video equipment
UEENEEH005A	Verify compliance and functionality of custom electronic installations
UEENEEH006A	Assemble and set up fixed audio/video components and systems in buildings and premises

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 20 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Data and Voice Communications

National Qualification Number UEE3 04 06

Scope

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain telecommunications and high performance data services in buildings and premises. It includes ACA requirements for Open Cabler Registration.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC016A	Participate in voice and data communications work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE019A	Solve problems in multiple path a.c. circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEF002A	Lay and connect cables for multiple access to telecommunication services
UEENEEF004A	Install and modify performance data communication structured cabling
UEENEEF005A	Install and modify performance data communication optical fibre cabling
UEENEEF009A	Install and connect voice and data communications equipment
UEENEEF010A	Select and arrange equipment for local area networks
UEENEEF011A	Test, report and rectify faults in voice and data installations

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 11 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Appliance Servicing

National Qualification Number UEE3 05 06

Scope

This qualification provides competencies to set up, service and repair electrical and refrigerated appliances with electives in gas appliances.

Note: The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 may apply to this qualification. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC017A	Participate in appliance servicing work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEJ002A	Prepare refrigeration tubing and fittings
UEENEEJ003A	Determine the basic operating conditions of vapour compression systems
UEENEEJ051A	Service small appliances and power tools
UEENEEJ053A	Find and rectify faults in appliance motors and associated controls
UEENEEJ054A	Find and rectify faults in appliance control systems
UEENEEJ055A	Service refrigerated appliances
UEENEEJ056A	Service clothes washers and dryers
UEENEEJ061A	Verify compliance and functionality of appliances
UEENEEJ062A	Recover, pressure and leak test, evacuate and charge refrigerants appliance
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply

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Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply
UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply
UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 5 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Electrical Machine Repair

National Qualification Number UEE3 06 06

Scope

This qualification provides competencies to overhaul and repair motor, transformer and control gear including rewinding

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC018A	Participate in electrical machine repair work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE033A	Document occupational hazards and risks in electrical work
UEENEEG001A	Solve problems in electromagnetic circuits
UEENEEG002A	Solve problems in single and three phase low voltage circuits
UEENEEG050A	Wind coils
UEENEEG051A	Place and connect coils
UEENEEG052A	Rewind single phase induction machines
UEENEEG053A	Rewind three phase induction machines rated for low voltage
UEENEEG057A	Conduct electrical tests on low voltage electrical machines
UEENEEG064A	Repair mechanical components of electrical machines
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 9 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Switchgear and Controlgear

National Qualification Number UEE3 07 06

Scope

This qualification provides competencies to construction, assembly and wiring of switchboards and control panels.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEA010A	Assemble, mount and connect switchgear and controlgear
UEENEEA012A	Make up and assemble bus bars
UEENEEA013A	Assemble and wire control panels
UEENEEC019A	Participate in switchgear and controlgear work and competency development activities
UEENEED005A	Enter and verify operating instructions in microprocessor equipped devices
UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE033A	Document occupational hazards and risks in electrical
UEENEEF015A	Assemble and connect communication frames and cabinets
UEENEEG001A	Solve problems in electromagnetic circuits
UEENEEG002A	Solve problems in single and three phase low voltage circuits
UEENEEG029A	Overhaul and repair switchgear/controlgear
UEENEEG064A	Repair mechanical components of electrical machines
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 5 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Electrotechnology Electrician

National Qualification Number UEE3 08 06

Scope

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain electrical systems and equipment in building and premises. It includes ERAC requirements for an 'Electrician's licence'.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC020A	Participate in electrical work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE033A	Document occupational hazards and risks in electrical
UEENEEG001A	Solve problems in electromagnetic circuits
UEENEEG002A	Solve problems in single and three phase low voltage circuits
UEENEEG003A	Install wiring and accessories for low voltage circuits
UEENEEG004A	Install low voltage electrical apparatus and associated equipment
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEG007A	Select and arrange equipment for general electrical installations
UEENEEG008A	Find and repair faults in electrical apparatus and circuits
UEENEEG009A	Develop and connect control circuits

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 6 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Electronics and Communications

National Qualification Number UEE3 09 06

Scope

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain electronic equipment and devices at component/sub-assembly level with options in communications, audio, video and TV, personal computer and networks, security and custom installations

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC021A	Participate in electronics and communications work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039A	Solve problems in basic amplifier circuits

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 19 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Fire Protection Control

National Qualification Number UEE3 10 06

Scope

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain fire protection systems in multiple, commercial and industrial premises.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC022A	Participate in fire protection control work and competency development activities
UEENEED005A	Enter and verify operating instructions in microprocessor equipped devices
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE019A	Solve problems in multiple path a.c. circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEF002A	Lay and connect cables for multiple access to telecommunication services
UEENEEH061A	Position and terminate fire detection and warning system apparatus
UEENEEH062A	Verify compliance and functionality of fire protection installations
UEENEEH063A	Enter and verify programs in preparation for commissioning fire protection systems
UEENEEH064A	Commission commercial fire protection systems
UEENEEH065A	Find and repair faults in fire protection systems

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 15 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Gaming Electronics

National Qualification Number UEE3 11 06

Scope

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain gaming machines used in registered clubs and hotels and dedicated games machines used in electronic game venues.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC023A	Participate in gaming electronic work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH007A	Carry out repairs of predictable faults in general electronic apparatus
UEENEEH009A	Set up and test gaming/games equipment
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH015A	Solve problems in microprocessor based hardware and firmware
UEENEEH020A	Find and repair faults in gaming and games equipment
UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039A	Solve problems in basic amplifier circuits

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 9 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Instrumentation and Control

National Qualification Number UEE3 12 06

Scope

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain systems and devices for measurement and recording of physical/chemical phenomenon and related process control.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC024A	Participate in instrumentation and control work and competency development activities
UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE035A	Document occupational hazards and risks in instrumentation
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEI001A	Install and set up transducers and sensing devices
UEENEEI002A	Solve problems in pressure measurement systems
UEENEEI003A	Solve problems in density/level measurement systems
UEENEEI004A	Solve problems in flow measurement systems
UEENEEI005A	Solve problems in temperature measurement systems
UEENEEI006A	Solve problems in process controllers, transmitters and converters
UEENEEI007A	Install process instrumentation and control cabling and tubing
UEENEEI008A	Install process control apparatus and associated equipment
UEENEEI010A	Set up and adjust process control loops
UEENEEI012A	Verify compliance and functionality of process control installations
UEENEEI013A	Select equipment for process control systems

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Refrigeration and Air-conditioning

National Qualification Number UEE3 13 06

Scope

This qualification provides competencies to select components, install, set up, test, fault find, repair and maintain refrigeration systems and equipment that apply to food storage and preservation, air conditioning and air distribution equipment in buildings and premises. It includes regulatory requirements for purchasing and handling refrigerants.

Completion requirements

The requirement for awarding this qualification is that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC025A	Participate in refrigeration and air conditioning work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE036A	Document occupational hazards and risks in refrigeration and Air-conditioning
UEENEEJ002A	Prepare refrigeration tubing and fittings
UEENEEJ003A	Determine the basic operating conditions of vapour compression systems
UEENEEJ004A	Determine the basic operating conditions of air conditioning systems
UEENEEJ006A	Install pipework for refrigeration and air conditioning systems
UEENEEJ007A	Install refrigeration and air conditioning systems, major components and associated equipment
UEENEEJ008A	Recover, pressure and leak test, evacuate and charge refrigerants
UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations
UEENEEJ010A	Select refrigeration pipe/tube, accessories and associated controls
UEENEEJ011A	Diagnose and rectify faults in refrigeration and air conditioning systems and components

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Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEJ013A	Commission refrigeration and air conditioning systems
UEENEEJ053A	Find and rectify faults in appliance motors and associated controls
UEENEEJ070A	Diagnose and rectify faults in refrigeration and air conditioning control systems
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply
UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply
UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply
UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 3 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Security Equipment

National Qualification Number UEE3 14 06

Scope

This qualification provides competencies in installation and pre-commissioning set up of wired and wireless security systems in multiple, commercial industrial premises.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC026A	Participate in security equipment work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE019A	Solve problems in multiple path a.c. circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEH050A	Assemble and set up basic wired and wireless security systems
UEENEEH051A	Install large wired and wireless security systems
UEENEEH052A	Enter instructions and test basic wired and wireless security systems
UEENEEH053A	Program and test large wired and wireless security systems
UEENEEH054A	Program and commission commercial security alarm systems
UEENEEH055A	Program and commission commercial security access control systems
UEENEEH056A	Program and commission commercial security closed circuit television (CCTV) systems

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 7 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Rail – Communications and Networks

National Qualification Number UEE3 15 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain radio and dedicated telecommunications networks in rail equipment.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC027A	Participate in rail communications and networks work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE019A	Solve problems in multiple path a.c. circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH014A	Solve problems in frequency dependant circuits
UEENEEH015A	Solve problems in microprocessor based hardware and firmware
UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039A	Solve problems in basic amplifier circuits

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 17 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate III in Wireless Communications

National Qualification Number RESERVED

Scope

To be developed through continuous improvement

END OF QUALIFICATION

Certificate III in Hazardous areas – Electrician

National Qualification Number UEE3 17 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain general electrical systems and equipment and install and test explosion-protected systems and equipment with endorsements in the various explosion protection techniques. It includes ERAC requirements for an 'Electrician's licence'.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC028A	Participate in hazardous areas work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE033A	Document occupational hazards and risks in electrical
UEENEEG001A	Solve problems in electromagnetic circuits
UEENEEG002A	Solve problems in single and three phase low voltage circuits
UEENEEG003A	Install wiring and accessories for low voltage circuits
UEENEEG004A	Install low voltage electrical apparatus and associated equipment
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEG007A	Select and arrange equipment for general electrical installations
UEENEEG008A	Find and repair faults in electrical apparatus and circuits
UEENEEG009A	Develop and connect control circuits
UEENEEM001A	Report on the integrity of explosion-protected equipment in hazardous areas

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 5.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

3. It is recommended that consideration be given to selecting from the following Units in meeting the elective requirements for this qualification:

UEENEEM003A Use and maintain the integrity of portable gas detection devices

UEENEEM004A Install explosion-protected equipment and wiring systems

UEENEEM005A Install and maintain integrity of fixed gas detection equipment

UEENEEM006A Maintain equipment in hazardous areas

UEENEEM009ATest installations in hazardous areas

UEENEEM010A Conduct close inspection of existing hazardous areas installations

END OF QUALIFICATION

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Certificate III in Hazardous areas – Instrumentation

National Qualification Number UEE3 18 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain instrumentation systems and equipment in buildings and premises and maintain and test explosion-protected instrumentation and control systems and equipment with endorsements in the various explosion protection techniques.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC028A	Participate in hazardous areas work and competency development activities
UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEE035A	Document occupational hazards and risks in instrumentation
UEENEEI001A	Install and set up transducers and sensing devices
UEENEEI002A	Solve problems in pressure measurement systems
UEENEEI003A	Solve problems in density/level measurement systems
UEENEEI004A	Solve problems in flow measurement systems
UEENEEI005A	Solve problems in temperature measurement systems
UEENEEI006A	Solve problems in process controllers, transmitters and converters
UEENEEI007A	Install process instrumentation and control cabling and tubing
UEENEEI008A	Install process control apparatus and associated equipment
UEENEEI010A	Set up and adjust process control loops
UEENEEI012A	Verify compliance and functionality of process control installations
UEENEEI013A	Select equipment for process control systems

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Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEM001A	Report on the integrity of explosion-protected equipment in hazardous areas

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 3.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

3. It is recommended that consideration be given to selecting from the following Units in meeting the elective requirements for this qualification:

UEENEEM002A Attend to breakdowns in hazardous areas

UEENEEM003A Use and maintain the integrity of portable gas detection devices

UEENEEM004A Install explosion-protected equipment and wiring systems

UEENEEM005A Install and maintain integrity of fixed gas detection equipment

UEENEEM006A Maintain equipment in hazardous areas

UEENEEM009A Test installations in hazardous areas

UEENEEM010A Conduct close inspection of existing hazardous areas installations

END OF QUALIFICATION

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Certificate III in Explosion-protected equipment overhaul

National Qualification Number UEE3 19 06

Scope

This qualification provides competencies to overhaul and repair of general and explosion-protected electrical machines, switchgear and controlgear.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEC029A	Participate in explosion-protected equipment overhaul work and competency development activities
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE033A	Document occupational hazards and risks in electrical
UEENEEG001A	Solve problems in electromagnetic circuits
UEENEEG002A	Solve problems in single and three phase low voltage circuits
UEENEEG029A	Overhaul and repair switchgear/controlgear
UEENEEG050A	Wind coils
UEENEEG051A	Place and connect coils
UEENEEG052A	Rewind single phase induction machines
UEENEEG053A	Rewind three phase induction machines rated for low voltage
UEENEEG057A	Conduct electrical tests on low voltage electrical machines
UEENEEG064A	Repair mechanical components of electrical machines
UEENEEM007A	Overhaul and repair explosion-protected equipment

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 3.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

3. It is recommended that consideration be given to selecting from the following Units in meeting the elective requirements for this qualification:

UEENEEM001A Report on the integrity of explosion-protected equipment in hazardous areas

UEENEEM002A Attend to breakdowns in hazardous areas

UEENEEM003A Use and maintain the integrity of portable gas detection devices

UEENEEM006A Maintain equipment in hazardous areas

UEENEEM009A Test installations in hazardous areas

UEENEEM010A Conduct close inspection of existing hazardous areas installations

END OF QUALIFICATION

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Certificate IV

Certificate IV in Computer Systems

National Qualification Number UEE4 01 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain data processing, communications and control aspects of systems used for monitoring and control of systems for access, surveillance, safety and effective operation of manufacturing, buildings, structures, premises and precincts.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEED002A	Assemble, set up and test personal computers
UEENEED012A	Support computers hardware and software
UEENEED043A	Install and configure a computer operating system and software
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE032A	Document occupational hazards and risks in computer systems
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH001A	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 34, of which at least 14 shall be selected from Schedule 4 and the remainder may be selected from Schedule 3/4, as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Electrical – Data and Voice Communications

National Qualification Number UEE4 02 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain electrical and communications systems and equipment in building and premises. It includes ERAC requirements for an 'Electrician's licence' and ACA requirements for Open cabler registration.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEF002A	Lay and connect cables for multiple access to telecommunication services
UEENEEF004A	Install and modify performance data communication structured cabling
UEENEEF005A	Install and modify performance data communication optical fibre cabling
UEENEEF009A	Install and connect voice and data communications equipment
UEENEEF011A	Test, report and rectify faults in voice and data installations
UEENEEG005A	Verify compliance and functionality of general electrical installations

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedule 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 2 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Installation Inspection and Audits

National Qualification Number UEE4 03 06

Scope

This qualification provides competencies in mandatory and contractual inspections of electrical systems and auditing of entities for compliance with electrical safety requirements.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEG022A	Conduct compliance inspection of single phase electrical installations
UEENEEG023A	Conduct compliance inspection of electrical installations with demand exceeding 100A per phase

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 13, of which at least 7 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Electrical – Instrumentation

National Qualification Number UEE4 04 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain electrical and instrumentation equipment in buildings and premises and instrumentation systems and core instrumentation equipment for process and control. It includes ERAC requirements for an 'Electrician's licence'.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEI001A	Install and set up transducers and sensing devices
UEENEEI002A	Solve problems in pressure measurement systems
UEENEEI003A	Solve problems in density/level measurement systems
UEENEEI004A	Solve problems in flow measurement systems
UEENEEI005A	Solve problems in temperature measurement systems

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 8, of which at least 2 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Electrical – Air-conditioning Split Systems

National Qualification Number UEE4 05 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain electrical systems and equipment in buildings and premises and core refrigeration/air conditioning equipment. It includes ERAC requirements for an 'Electrician's licence' and regulatory requirements for purchasing and handling refrigerants.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEJ002A	Prepare refrigeration tubing and fittings
UEENEEJ005A	Position, assemble and start up split air conditioning systems

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved:

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 13, of which at least 7 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Electrotechnology – Systems Electrician

National Qualification Number UEE4 06 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain electrical systems and equipment with options, typically in Explosion protection; Electrical machines; Electrical inspection; Safety auditing; Contracting; Lifts; Energy supply/distribution.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved:

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

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In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 18, of which at least 12 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Electronics and Communications

National Qualification Number UEE4 07 06

Scope

This qualification provides competencies in audio/video, data systems and computer/network hardware, medical applications and communication aspects of electronic i.e. transmitters,communications medium/channel, receivers, attenuation, noise reduction. It includes detection/surveillance.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039A	Solve problems in basic amplifier circuits

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved:

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 31, of which at least 12 shall be selected from Schedule 4 and the remainder may be selected from Schedule 3/4, as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Electrical – Fire Protection Control Systems

National Qualification Number UEE4 08 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain fire protection control systems in buildings. It includes ERAC requirements for an 'Electrician's licence'.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEH061A	Position and terminate fire detection and warning system apparatus
UEENEEH062A	Verify compliance and functionality of fire protection installations
UEENEEH063A	Enter and verify programs in preparation for commissioning fire protection systems
UEENEEH064A	Commission commercial fire protection systems
UEENEEH065A	Find and repair faults in fire protection systems

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 7, of which at least 1 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Industrial Electronics and Control

National Qualification Number UEE4 09 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain equipment and systems for the control of plant, machines and processes

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

Option 1

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations

Option 2

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEI012A	Verify compliance and functionality of process control installations

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 18, of which at least 12 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Energy Management and Control

National Qualification Number UEE4 10 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain equipment and systems for energy management, plant and other services in building, premises and precincts.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEJ036A	Evaluate and report on energy management
UEENEEJ009A	Verify compliance and functionality of refrigeration and Air-conditioning installation

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

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In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 12, of which at least 8 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Electrical – Lift Systems

National Qualification Number UEE4 11 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain lifts, escalators and associated equipment. It includes ERAC requirements for an 'Electrician's licence'.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEG016A	Diagnose and rectify faults in lifts systems
UEENEEG068A	Diagnose and rectify faults in complex lifts systems
UEENEEH043	Diagnose and rectify faults in digital subsystems of electronic controls
UEENEEH044A	Diagnose and rectify faults in digital subsystems of electronic controls

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 6, of which all shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Electrical – Rail Signalling

National Qualification Number UEE4 12 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain rail signalling equipment and systems. It includes ERAC requirements for an 'Electrician's licence'.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEN002A	Assemble and wire internal electrical signalling equipment

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

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In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 17, of which at least 11 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Refrigeration and Air-conditioning Servicing

National Qualification Number UEE4 13 06

Scope

This qualification provides competencies in high level fault diagnosis and rectification, commissioning and maintenance of refrigeration systems and equipment that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications. It includes regulatory requirements for purchasing and handling refrigerants.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an Electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations
UEENEEJ012A	Diagnose and rectify faults in complex refrigeration/air conditioning systems

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 10, of which at least 9 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Refrigeration and Air-conditioning Systems

National Qualification Number UEE4 14 06

Scope

This qualification provides competencies to develop controls and monitor and adjust components to obtain effective operation of refrigeration systems that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an Electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations
UEENEEJ027A	Determine thermodynamic parameters of refrigeration and air conditioning systems
UEENEEJ028A	Produce HVAC/R design drawings
UEENEEJ029A	Develop specifications for heat exchanger designs.

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEE020A Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 5 of which 3 shall be selected form Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Video and Audio Systems

National Qualification Number UEE4 15 06

Scope

This qualification provides competencies to service high end audio, video, display systems and HDTV.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH019A	Carry out repairs of predictable faults in television receivers
UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039A	Solve problems in basic amplifier circuits
UEENEEH071A	Find and repair faults in television receivers

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 19, of which at least 9 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Renewable Energy

National Qualification Number UEE4 16 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain multiple renewable energy sources and equipment for control of energy use.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units	
All Core Competency Standard Units to be achieved	
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEK023A	Carry out repairs to renewable energy apparatus by replacement of components

Stream Core Competency Standard Units	
At least 3 of the following Competency Standard Units to be achieved	
UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 14, of which at least 8 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Rail – Communications and Network Systems

National Qualification Number UEE4 17 06

Scope

This qualification provides competencies to select, install, commission, fault find and maintain radio and dedicated telecommunications networks in rail systems.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE019A	Solve problems in multiple path a.c. circuits
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH014A	Solve problems in resonance circuits
UEENEEH015A	Solve problems in microprocessor based hardware and firmware
UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039A	Solve problems in basic amplifier circuits

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 27, of which at least 12 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Certificate IV in Hazardous areas

National Qualification Number UEE4 18 06

Scope

This qualification provides competencies to supervise selection, installation, commissioning, maintenance and testing explosion-protected systems and equipment with endorsements in the various explosion protection techniques.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

Option 1

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEM004A	Install explosion-protected equipment and wiring systems

Option 2

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEI012A	Verify compliance and functionality of process control installations
UEENEEM004A	Install explosion-protected equipment and wiring systems

Note.

Option 2 relates to instrumentation operating at voltages ≤ 50 V a.c. or 120 V d.c.

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3 and 4, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 13 , of which at least 7 shall be selected from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

3. It is recommended that consideration be given to selecting from the following Units in meeting the elective requirements for this qualification:

UEENEEM002A Attend to breakdowns in hazardous areas

UEENEEM003A Use and maintain the integrity of portable gas detection devices

UEENEEM005A Install and maintain integrity of fixed gas detection equipment

UEENEEM006A Maintain equipment in hazardous areas

UEENEEM009A Test installations in hazardous areas

UEENEEM010A Conduct close inspection of existing hazardous areas installations

UEENEEM011A Conduct detailed inspection of hazardous areas installations

UEENEEM013A Ensure the safety of hazardous areas

END OF QUALIFICATION

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Diploma

Diploma of Computer Systems Engineering

National Qualification Number UEE5 01 06

Scope

This qualification provides competencies to develop, select, install, commission and maintain computer equipment and systems.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEED002A	Assemble, set up and test personal computers
UEENEED012A	Support computers hardware and software
UEENEED043A	Install and configure a computer operating system and software
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE032A	Document occupational hazards and risks in computer systems
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE070A	Write specifications for computer systems engineering projects
UEENEEH001A	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies
UEENEEH014A	Solve problems in frequency dependent circuits

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Or

At least 4 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3, 4 and 5 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 46 of which at least 14 shall be selected from Schedule 5, and not more than 12 from schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Diploma of Electrical and Instrumentation

National Qualification Number UEE5 02 06

Scope

This qualification provides competencies to develop, select, install, commission, maintain and diagnose faults/malfunctions on electrical, instrumentation and control equipment and systems. It includes ERAC requirements for an 'Electrician's licence'.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

Core Option 1

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE071A	Write specifications for electrical engineering projects
UEENEEG005A	Verify compliance and functionality of general electrical installations

OR

Core Option 2

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE075A	Write specifications for industrial electronics and control projects
UEENEEI012A	Verify compliance and functionality of process control installations

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Or

At least 4 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3, 4 and 5 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 32 of which at least 12 shall be selected from Schedule 5, and not more than 14 from schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Diploma of Electrical and Refrigeration and Air-conditioning

National Qualification Number UEE5 03 06

Scope

This qualification provides competencies to select, install, commission, maintain and diagnose faults/malfunctions on refrigeration systems and equipment that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications and associated electrical systems. It includes ERAC requirements for an 'Electrician's licence' and regulatory requirements for purchasing and handling refrigerants.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

Core Option 1

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE071A	Write specifications for electrical engineering projects
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations

Core Option 2

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE073A	Write specifications for refrigeration and air conditioning engineering projects

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UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Or

At least 4 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3, 4 and 5 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 9.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Diploma of Electrical Engineering

National Qualification Number UEE5 04 06

Scope

This qualification provides competencies to develop, select, commission, maintain and diagnose faults/malfunctions on advanced electrical equipment and systems. It includes ERAC requirements for an 'Electrician's licence'.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE071A	Write specifications for electrical engineering projects
UEENEEG005A	Verify compliance and functionality of general electrical installations

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Or

At least 4 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3, 4 and 5 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 32 of which at least 14 shall be selected from Schedule 5, and not more than 12 from schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Diploma of Electronics and Communications Engineering

National Qualification Number UEE5 05 06

Scope

This qualification provides competencies to develop, select, commission, maintain and diagnose faults/malfunctions of electronic components/sub-assemblies, apparatus and systems.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005A	Fix and secure equipment
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE072A	Write specifications for electronics and communications engineering projects
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039A	Solve problems in basic amplifier circuits

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Or

At least 4 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3, 4 and 5 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 45 of which at least 14 shall be selected from Schedule 5, and not more than 12 from schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Diploma of Refrigeration and Air-conditioning Engineering

National Qualification Number UEE5 06 06

Scope

This qualification provides competencies to develop systems, select equipment, and commission, maintain and diagnose faults/malfunctions of refrigeration systems and equipment that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an Electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEJ009A	Verify compliance and functionality of refrigeration and Air-conditioning installations
UEENEEJ027A	Determine thermodynamic parameters of refrigeration and air conditioning systems
UEENEEJ028A	Produce HVAC/R design drawings
UEENEEJ029A	Develop specifications for heat exchanger designs.
UEENEEJ031A	Provide solutions to vibration problems in HVAC/R system design
UEENEEJ065A	Evaluate fluid and thermodynamic parameters of refrigeration systems

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM512B	Ensure team effectiveness

Or

At least 4 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3, 4 and 5 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 8 of which at least 3 shall be selected from Schedule 5, and not more than 3 from schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Diploma of Renewable Energy Engineering

National Qualification Number UEE5 07 06

Scope

This qualification provides competencies to develop, select, commission, maintain and diagnose faults/malfunctions on large scale renewable energy equipment and systems.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE076A	Write specifications for renewable energy projects
UEENEEG005A	Verify compliance and functionality of general electrical installations

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Or

At least 4 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3, 4 and 5 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 32 of which at least 14 shall be selected from Schedule 5, and not more than 12 from schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Diploma of Research and Development

National Qualification Number UEE5 08 06

Scope

This qualification provides competencies to assist professional in-planning, research and development of electrotechnology products and services.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEER001A	Contribute to the planning of a research project
UEENEER002A	Contribute to the conduct of a research project
UEENEER003A	Contribute to the development of a Product/Application/Service
UEENEER004A	Contribute to the trial of a Product/Application/Service
UEENEER005A	Contribute to Intellectual Property Management
UEENEER006A	Contribute to the commercialisation of a Product/Application/Service

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Or

At least 4 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 5 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 50 of which at least 14 shall be selected from Schedule 5, and not more than 12 from schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Diploma of Industrial Electronics and Control Engineering

National Qualification Number UEE5 09 06

Scope

This qualification provides competencies to develop, select, commission, maintain and diagnose faults/malfunctions of equipment and systems for the monitoring and control of plant, machines and processes.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

Option 1

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE075A	Write specifications for industrial electronics and control projects
UEENEEG005A	Verify compliance and functionality of general electrical installations

Option 2

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE075A	Write specifications for industrial electronics and control projects
UEENEEI012A	Verify compliance and functionality of process control installations

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Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Or

At least 4 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

Elective Competency Standard Units

In accordance with Schedules 3, 4 and 5 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 32 of which at least 14 shall be selected from Schedule 5, and not more than 12 from schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Advanced Diploma

Advanced Diploma of Electrical Engineering

National Qualification Number UEE6 01 06

Scope

This qualification provides competencies to design and validate/evaluate electrical equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE071A	Write specifications for electrical engineering projects
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEG047A	Provide computational solutions to power engineering problems
UEENEEG048A	Solve problems in complex multiple path power circuits
UEENEEG049A	Solve problems in complex polyphase power circuits
UEENEEG069A	Manage electrical projects
UEENEEG070A	Plan electrical projects

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

BSBFLM512B Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 44 of which at least 14 shall be selected from Schedule 6, and at least 14 from schedule 5 and not more than 12 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.
3. Registered training organisations shall provide competency development advice in relation to any licensing requirements to practice that apply, or can contribute towards the qualification requirement, prior to establishing the competency development plan.

END OF QUALIFICATION

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Advanced Diploma of Electronics and Communications Engineering

National Qualification Number UEE6 02 06

Scope

This qualification provides competencies to design and validate/evaluate electronics and communication equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

Core Option 1

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE072A	Write specifications for electronics and communications engineering projects
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH039A	Solve problems in basic amplifier circuits
UEENEEH041A	Manage and implement electronic projects
UEENEEH060A	Plan electronic projects

OR

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Core Option 2

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE072A	Write specifications for electronics and communications engineering projects
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH039A	Solve problems in basic amplifier circuits
UEENEEH041A	Manage and implement electronic projects
UEENEEH060A	Plan electronic projects

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 67 of which at least 16 shall be selected from Schedule 6, and at least 14 from schedule 5 and not more than 12 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Advanced Diploma of Electrical/Electronic – Technology

National Qualification Number UEE6 03 06

Scope

This qualification provides enabling competencies to design and validate/evaluate electrical or electronics and communication equipment and systems and provide technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEED002A	Assemble, set up and test personal computers
UEENEED004A	Use engineering applications software
UEENEED017A	Install and configure Internetworking systems
UEENEED027A	Develop structured programs for control sub systems to access external devices
UEENEED028A	Develop and test basic specification for microcontroller equipped devices
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE029A	Solve electrotechnical problems
UEENEEE046A	Identify affects of energy on machinery and materials in an electrotechnology environment
UEENEEE050A	Undertake computations in an electrotechnology environment
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEG012A	Solve fundamental problems in electrical systems
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH039A	Solve problems in basic amplifier circuits
UEENEEH046A	Solve fundamental problems in electronic communications systems

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Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEH070A	Terminate and connect components, conductors, wiring and cables for electronic circuits

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus
BSBFLM506B	Manage workplace information systems
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which form in integral part of this qualification, achieve a Unit Strand Total of at least 40 of which at least 28 shall be selected from Schedule 6, and at least 14 from Schedule 5, and not more than 8 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Advanced Diploma of Computer Systems Engineering

National Qualification Number UEE6 04 06

Scope

This qualification provides competencies to design, install/validate/evaluate and administer computer equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

Option 1

UEENEED002A	Assemble, set up and test personal computers
UEENEED012A	Support computers hardware and software
UEENEED043A	Install and configure a computer operating system and software
UEENEED047A	Manage computer projects
UEENEED048A	Plan computer systems projects
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE023A	Solve basic problems in electronic and digital equipment
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE032A	Document occupational hazards and risks in computer systems
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE070A	Write specifications for computer systems engineering projects
UEENEEH001A	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies

OR

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Option 2

UEENEED002A	Assemble, set up and test personal computers
UEENEED012A	Support computers hardware and software
UEENEED043A	Install and configure a computer operating system and software
UEENEED047A	Manage computer projects
UEENEED048A	Plan computer systems projects
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE032A	Document occupational hazards and risks in computer systems
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE070A	Write specifications for computer systems engineering projects
UEENEEH001A	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which forms an integral part of this qualification, achieve a Unit Strand Total of at least 66 of which at least 16 shall be selected from Schedule 6, and at least 14 from schedule 5 and not more than 23 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Advanced Diploma of Computer Systems – Technology

National Qualification Number UEE6 05 06

Scope

This qualification provides enabling competencies to design, install/validate/evaluate and administer computer and network based systems and provide technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEED002A	Assemble, set up and test personal computers
UEENEED004A	Use engineering applications software
UEENEED012A	Support computers hardware and software
UEENEED017A	Install and configure Internetworking systems
UEENEED028A	Develop and test basic specification for microcontroller equipped devices
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE029A	Solve electrotechnical problems
UEENEEE032A	Document occupational hazards and risks in computer systems
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE046A	Identify affects of energy on machinery and materials in an electrotechnology environment
UEENEEE050A	Undertake computations in an electrotechnology environment
UEENEEG012A	Solve fundamental problems in electrical systems
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH070A	Terminate and connect components, conductors, wiring and cables for electronic circuits

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus
BSBFLM506B	Manage workplace information systems
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which form in integral part of this qualification, achieve a Unit Strand Total of at least 45 of which at least 18 shall be selected from Schedule 6, and at least 16 from Schedule 5, and be not more than 4 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Advanced Diploma of Industrial Electronics and Control Engineering

National Qualification Number UEE6 06 06

Scope

This qualification provides competencies to design and validate/evaluate control equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

Option 1

UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE075A	Write specifications for industrial electronics and control projects
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEG047A	Provide computational solutions to power engineering problems
UEENEEG048A	Solve problems in complex multiple path power circuits
UEENEEG049A	Solve problems in complex polyphase power circuits
UEENEEI034A	Manage control projects
UEENEEI035A	Plan control projects

OR

Option 2

UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems

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UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE075A	Write specifications for industrial electronics and control projects
UEENEEI012A	Verify compliance and functionality of process control installations
UEENEEI034A	Manage control projects
UEENEEI035A	Plan control projects

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which form in integral part of this qualification, achieve a Unit Strand Total of at least 45 of which at least 12 shall be selected from Schedule 6, and at least 14 from Schedule 5, and not more than 12 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.
3. Registered training organisations shall provide competency development advice in relation to any licensing requirements to practice that apply, or can contribute towards the qualification requirement, prior to establishing the competency development plan.

END OF QUALIFICATION

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Advanced Diploma of Refrigeration and Air-conditioning Engineering

National Qualification Number UEE6 07 06

Scope

This qualification provides competencies to design and validate/evaluate refrigeration and air conditioning equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations
UEENEEJ027A	Determine thermodynamic parameters of refrigeration and air conditioning systems
UEENEEJ028A	Produce HVAC/R design drawings
UEENEEJ029A	Develop specifications for heat exchanger designs
UEENEEJ031A	Provide solutions to vibration problems in HVAC/R system design
UEENEEJ038A	Analyse noise, vibration and thermodynamic parameters of refrigeration and air conditioning systems
UEENEEJ040A	Manage refrigeration and air conditioning projects
UEENEEJ065A	Evaluate fluid and thermodynamic parameters of refrigeration systems
UEENEEJ069A	Plan refrigeration and air conditioning projects

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships

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Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which form in integral part of this qualification, achieve a Unit Strand Total of at least 23 of which at least 13 shall be selected from Schedule 6, and not be not more than 6 from Schedule 5, and not more than 3 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Advanced Diploma of Refrigeration and Air-conditioning – Technology

National Qualification Number UEE6 08 06

Scope

This qualification provides enabling competencies to design and validate/evaluate refrigeration and air conditioning equipment and systems and provide technical advice/sales

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units having being met as required by each competency standard unit,

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE029A	Solve electrotechnical problems
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE046A	Identify affects of energy on machinery and materials in an electrotechnology environment
UEENEEE050A	Undertake computations in an electrotechnology environment
UEENEEG012A	Solve fundamental problems in electrical systems
UEENEEJ038A	Analyse noise, vibration and thermodynamic parameters of refrigeration and air conditioning systems
UEENEEJ065A	Evaluate fluid and thermodynamic parameters of refrigeration systems

Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus
BSBFLM506B	Manage workplace information systems
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedule 3, 4, 5 and 6 which form an integral part of this qualification, achieve a Unit Strand Total of 50 of which at least 19 shall be selected from Schedule 6, and at least 10 from Schedule 5 and not more than 16 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Advanced Diploma of Renewable Energy Engineering

National Qualification Number UEE6 09 06

Scope

This qualification provides competencies to design and validate/evaluate renewable energy equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEG047A	Provide computational solutions to power engineering problems
UEENEEG048A	Solve problems in complex multiple path power circuits
UEENEEG049A	Solve problems in complex polyphase power circuits
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE074A	Write specifications for renewable energy projects
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEK021A	Manage renewable energy projects
UEENEEK022A	Plan renewable energy projects

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

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Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which form an integral part of this qualification, achieve a Unit Strand Total of at least 45 of which at least 14 shall be selected from Schedule 6, and at least 18 from schedule 5 and not more than 10 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Advanced Diploma of Renewable Energy – Technology

National Qualification Number UEE6 10 06

Scope

This qualification provides competencies in preparation to design and validate/evaluate renewable energy equipment and systems and provide technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core competency standard units;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved

UEENEED002A	Assemble, set up and test personal computers
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE029A	Solve electrotechnical problems
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE046A	Identify affects of energy on machinery and materials in an electrotechnology environment
UEENEEE050A	Undertake computations in an electrotechnology environment
UEENEEG012A	Solve fundamental problems in electrical systems
UEENEEK023A	Carry out basic repairs to renewable energy apparatus by replacement of components
UEENEEK025A	Solve basic problems in photovoltaic energy apparatus
UEENEEK028A	Solve problems in stand-alone renewable energy systems
UEENEEK032A	Develop strategies to address sustainability issues
UEENEEK041A	Develop strategies for effective energy reduction in buildings

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Stream Core Competency Standard Units

At least 3 of the following Competency Standard Units to be achieved

UEENEEC001A	Maintain documentation
UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC010A	Deliver a service to customers
UEENEED001A	Use basic computer applications relevant to a workplace
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus
BSBFLM506B	Manage workplace information systems
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedule 6, which forms an integral part of this qualification, achieve a Unit Strand Total of at least 49 of which at least 28 shall be selected from Schedule 6, and at least 14 from Schedule 5, and not more than 8 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Advanced Diploma of Automated Systems Maintenance Engineering

National Qualification Number UEE6 11 06

Scope

This qualification provides competencies to monitor/validate/evaluate automated equipment and systems, manage risk, develop and manage maintenance programs, and provide technical advice.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

Option 1

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE077A	Write specifications for automated systems projects
UEENEEI028A	Set up controls on complex fluid systems
UEENEEI036A	Manage automated systems projects
UEENEEI037A	Plan automated systems projects

OR

Option 2

UEENEEE001A	Apply OHS practices in the workplace
UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE025A	Solve problems in complex multiple path circuits

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UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE064A	Design machine drives and production plan layouts
UEENEEE077A	Write specifications for automated systems projects
UEENEEI036A	Manage automated systems projects
UEENEEI037A	Plan automated systems projects

Stream Core Competency Standard Units

At least 2 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which form an integral part of this qualification, achieve a Unit Strand Total of at least 80 of which at least 26 shall be selected from Schedule 6, and at least 14 from Schedule 5, and not more than 12 from Schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.
3. Registered training organisations shall provide competency development advice in relation to any licensing requirements to practice that apply, or can contribute towards the qualification requirement, prior to establishing the competency development plan.

END OF QUALIFICATION

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Advanced Diploma of Engineering – Explosion protection

National Qualification Number UEE 6 12 06

Scope

This qualification provides competencies to assess and manage risk associated with hazardous areas, design and validate/evaluate explosion protection aspects of electrical and instrument systems, audit explosion-protected installations and provide explosion protection technical advice/sales.

Completion requirements

The requirements for awarding this qualification are that the following are successfully achieved:

- All of the Core Competency Standard Units from Option 1 or Option 2;
- The required number of Stream Core competency standard units;
- The required number of Elective Competency Standard Units as prescribed in the respective Schedule; and
- All the required prerequisite Competency Standard Units have been met as required.

Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

Option 1

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE071A	Write specifications for electrical engineering projects
UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEG047A	Provide computational solutions to power engineering problems
UEENEEG048A	Solve problems in complex multiple path power circuits
UEENEEG049A	Solve problems in complex polyphase power circuits
UEENEEM010A	Conduct close inspection of existing hazardous areas installations
UEENEEM015A	Classify hazardous areas

OR

Option 2

UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems

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Core Competency Standard Units

All Core Competency Standard Units to be achieved for option 1 or option 2

UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE075A	Write specifications for industrial electronics and control projects
UEENEEI012A	Verify compliance and functionality of process control installations
UEENEEM010A	Conduct close inspection of existing hazardous areas installations
UEENEEM015A	Classify hazardous areas

Note. Option 2 relates to instrumentation operating at voltages ≤ 50 V a.c. or 120 V d.c.

Stream Core Competency Standard Units

At least 1 of the following Competency Standard Units to be achieved

BSBFLM503B	Manage effective workplace relationships
BSBFLM506B	Manage workplace information systems
BSBFLM509B	Facilitate continuous improvement
BSBFLM510B	Facilitate and capitalise on change and innovation
BSBFLM512B	Ensure team effectiveness

Elective Competency Standard Units

In accordance with Schedules 3, 4, 5 and 6 which form an integral part of this qualification, achieve a Unit Strand Total of at least 46 of which at least 14 shall be selected from Schedule 6, and at least 14 from Schedule 5, and not more than 7 from schedule 4 as specified.

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

3. It is recommended that consideration be given to selecting from the following Units in meeting the elective requirements for this qualification:

UEENEEM001A Report on the integrity of explosion-protected equipment in hazardous areas

UEENEEM002A Attend to breakdowns in hazardous areas

UEENEEM003A Use and maintain the integrity of portable gas detection devices

UEENEEM004A Install explosion-protected equipment and wiring systems

UEENEEM005A Install and maintain integrity of fixed gas detection equipment

UEENEEM006A Maintain equipment in hazardous areas

UEENEEM007A Overhaul and repair explosion-protected equipment

UEENEEM008A Assess explosion-protected equipment for compliance with standards

UEENEEM009A Test installations in hazardous areas

UEENEEM010A Conduct close inspection of existing hazardous areas installations

UEENEEM011A Conduct detailed inspection of hazardous areas installations

UEENEEM0112A Develop and manage maintenance programs for hazardous areas electrical equipment

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UEENEEM013A Ensure the safety of hazardous areas
UEENEEM014A Design and develop modifications to explosion-protected equipment
UEENEEM016A Design electrical installations in hazardous areas
UEENEEM017A Design explosion-protected electrical systems
UEENEEM018A Design gas detection systems

END OF QUALIFICATION

END OF QUALIFICATION STRUCTURES

SCHEDULE OF ELECTIVES FOLLOWS

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Schedule of Electives

The Schedule of Electives forms an integral part of the requisite qualification structure of this Training Package.

Schedule of Electives – 1

Competency standard units have been put into strands to facilitate work outcomes for the qualification, as specified by industry stakeholders. This design feature has been developed to enhance flexibility for enterprise outcomes.

The following dot points provide examples on the use of the Schedule in selecting appropriate Competency Standard Units to complete the Elective requirements of the qualification:

- 1 unit from strand 6, gives a unit strand total of 6
- 2 units from strand 3, gives a unit strand total of 6
- 1 unit from strand 5 PLUS 1 unit from strand 1, gives a unit strand total of 6

Notes:

1. All prerequisites must be met prior to completing each competency standard unit.
2. Where a competency standard unit is achieved as part of the core of a qualification it shall not be used again for selection as an elective unit.

Strand 8

Schedule 1 – Strand 8 Electives

UEENEEE045A	Apply computation when using equipment, materials and concepts in an electrotechnology environment

Strand 7

Schedule 1 – Strand 7 Electives

Nil

Strand 6

Schedule 1 – Strand 6 Electives

UEENEEE043A	Produce routine tools/devices for carrying out electrotechnology work activities
UEENEEE046A	Identify affects of energy on machinery and materials in an electrotechnology environment

Strand 5

Schedule 1 – Strand 5 Electives

Nil

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Strand 4

Schedule 1 – Strand 4 Electives

Nil

Strand 3

Schedule 1 – Strand 3 Electives

Nil

Strand 2

Schedule 1 – Strand 2 Electives

UEENEEB001A	Operate and maintain an amateur radio communication station
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits

Strand 1

Schedule 1 – Strand 1 Electives

UEENEEE005A	Fix and secure equipment
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus

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Schedule of Electives – 2

Competency standard units have been put into strands to facilitate work outcomes for the qualification, as specified by industry stakeholders. This design feature has been developed to enhance flexibility for enterprise outcomes.

The following dot points provide examples on the use of the Schedule in selecting appropriate Competency Standard Units to complete the Elective requirements of the qualification:

- 1 unit from strand 6, gives a unit strand total of 6
- 2 units from strand 3, gives a unit strand total of 6
- 1 unit from strand 5 PLUS 1 unit from strand 1, gives a unit strand total of 6

Notes:

1. All prerequisites must be met prior to completing each competency standard unit.
2. Where a competency standard unit is achieved as part of the core of a qualification it shall not be used again for selection as an elective unit.

Strand 8

Schedule 2 – Strand 8 Electives

UEENEEE045A	Apply computation when using equipment, materials and concepts in an electrotechnology environment

Strand 7

Schedule 2 – Strand 7 Electives

Nil

Strand 6

Schedule 2 – Strand 6 Electives

UEENEEE042A	Produce routine products for carrying out electrotechnology work activities
UEENEEE043A	Produce routine tools/devices for carrying out electrotechnology work activities
UEENEEE044A	Apply technologies and concepts to electrotechnology work activities
UEENEEE046A	Identify affects of energy on machinery and materials in an electrotechnology environment
UEENEEE047A	Identify building techniques, methods and materials used in electrotechnology work activities
UEENEEE049A	Contribute to the operation of support plant and equipment used in electricity supply
UEENEEE050A	Undertake computations in an electrotechnology environment
UEENEEF002A	Lay and connect cables for multiple access to telecommunication services
UEENEEG052A	Rewind single phase induction machines
UEENEEH003A	Carry out routine repairs to business equipment

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Schedule 2 – Strand 6 Electives

UEENEEH006A	Assemble and set up fixed audio/video components and systems in buildings and premises
UEENEEK017A	Maintain and repair facilities associated with remote area essential services operation
UEENEEK018A	Maintain operation of remote area water facilities
UEENEEK020A	Maintain operation of remote area power plant

Strand 5

Schedule 2 – Strand 5 Electives

UEENEEK013A	Apply sustainable energy practice in daily activities

Strand 4

Schedule 2 – Strand 4 Electives

UEENEED002A	Assemble, set up and test personal computers
UEENEEE023A	Solve basic problems in electronic and digital equipment
UEENEEE040A	Identify and select materials for electrotechnology work activities
UEENEEK019A	Maintain operation of remote area waste water facilities
UEENEEH050A	Assemble and set up basic wired and wireless security systems
UEENEEK023A	Carry out basic repairs to renewable energy apparatus by replacement of components
UEENEEK025A	Solve basic problems in photovoltaic energy apparatus

Strand 3

Schedule 2 – Strand 3 Electives

UEENEED046A	Set up and configure basic local area network
UEENEEE022A	Carry out preparatory electrotechnology work activities
UEENEEE030A	Provide solutions to and report on routine electrotechnology problems
UEENEEE041A	Use routine equipment/plant/technologies in an electrotechnology environment
UEENEEE051A	Transport apparatus and materials
UEENEEF015A	Assemble and connect communication frames and cabinets
UEENEEH008A	Assemble and erect reception antennae and signal distribution equipment
UEENEEH009A	Set up and test gaming/games equipment
UEENEEH028A	Install microwave and antennae and waveguides
UEENEEH062A	Verify compliance and functionality of fire protection installations
UEENEEJ005A	Position, assemble and start up split air conditioning systems
UEENEEJ051A	Service small appliances and power tools
UEENEEK011A	Assemble and connect remote area power supplies

Strand 2

Schedule 2 – Strand 2 Electives

UEENEEA001A	Assemble electronic apparatus
UEENEEA003A	Set up and check electronic component placement machines

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Schedule 2 – Strand 2 Electives

UEENEEA004A	Rework electronic sub assemblies
UEENEEA006A	Apply lead-free soldering techniques
UEENEEB001A	Operate and maintain an amateur radio communication station
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE048A	Carry out routine work activities in an electrotechnology environment
UEENEEF006A	Solve problems in data and voice communications circuits
UEENEEF007A	Set up wireless capabilities of communications and data storage devices
UEENEEG011A	Carry out basic repairs to electrical apparatus
UEENEEG050A	Wind coils
UEENEEG051A	Place and connect coils
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH004A	Set up and test audio/video equipment
UEENEEH061A	Position and terminate fire detection and warning system apparatus
UEENEEJ002A	Prepare refrigeration tubing and fittings
UEENEEJ003A	Determine the basic operating conditions of vapour compression systems
UEENEEJ004A	Determine the basic operating conditions of air conditioning systems
UEENEEJ062A	Recover, pressure and leak test, evacuate and charge refrigerants appliance
UEENEEJ072A	Recover, pressure and leak test, evacuate and charge refrigerants – split air conditioning systems
UEENEEK003A	Conduct periodic maintenance of remote area power supply (RAPS) battery banks
UEENEEK004A	Conduct periodic maintenance of remote area power supply (RAPS) generator sets
UEENEEK005A	Conduct periodic maintenance of remote area power supply (RAPS) photo voltaic arrays
UEENEEK006A	Conduct periodic maintenance of remote area power supply (RAPS) wind generators
UEENEEK007A	Conduct audits in the demand side use of remote area power supplies
UEENEEK008A	Plan periodic maintenance schedules of remote area power supplies
UEENEEK012A	Provide basic sustainable energy solutions for energy reduction in domestic premises
UEENEEK014A	Promote sustainable energy practice in the community
UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply
UEENEEP006A	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply
EPOPS234A	Perform Routine Oxyacetylene (Fuel Gas) Welding

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Schedule 2 – Strand 2 Electives

UEPOPS235A	Perform Routine Manual Arc Welding
UEPOPS236A	Perform Manual Heating, Thermal Cutting and Gouging

Strand 1

Schedule 2 – Strand 1 Electives

UEENEEA002A	Select electronic components
UEENEEA005A	Conduct functional and quality tests on assembled electronic apparatus
UEENEED005A	Enter and verify operating instructions in microprocessor equipped devices
UEENEEE001A	Apply OHS practices in the workplace
UEENEEE005A	Fix and secure equipment
UEENEEE032A	Document occupational hazards and risks in computer systems
UEENEEE033A	Document occupational hazards and risks in electrical
UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE035A	Document occupational hazards and risks in instrumentation
UEENEEE036A	Document occupational hazards and risks in refrigeration and Air-conditioning
UEENEEE037A	Document occupational hazards and risks in electrotechnology
UEENEEF001A	Lay and connect cabling for direct access to telecommunication services
UEENEEJ052A	Carry out repairs to appliance refrigeration systems
UEENEEK001A	Maintain safety and tidiness of remote area power supply (RAPS) systems
UEENEEK002A	Work safely with remote area power supply (RAPS) systems
UEENEEK024A	Assemble and set up photovoltaic apparatus in domestic dwellings
UEENEEM001A	Report on the integrity of explosion-protected equipment in hazardous areas
UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply
UEENEEP008A	Conduct inservice safety testing of electrical cord assemblies and cord connected equipment

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Schedule of Electives – 3

Competency standard units have been put into strands to facilitate work outcomes for the qualification, as specified by industry stakeholders. This design feature has been developed to enhance flexibility for enterprise outcomes.

The following provides examples on the use of the Schedules in selecting appropriate Competency Standard Units to complete the elective requirements of the qualification:

- 1 unit from strand 6, gives a unit strand total of 6
- 2 units from strand 3, gives a unit strand total of 6
- 1 unit from strand 5 PLUS 1 unit from strand 1, gives a unit strand total of 6

Notes:

1. All prerequisites must be met prior to completing each competency standard unit.
2. Where a competency standard unit is achieved as part of the core of a qualification it shall not be used again for selection as an elective unit.

Strand 6

Schedule 3 – Strand 6 Electives

UEENEEA010A	Assemble, mount and connect switchgear and controlgear
UEENEED012A	Support computers hardware and software
UEENEEF002A	Lay and connect cables for multiple access to telecommunication services
UEENEEF010A	Select and arrange equipment for local area networks
UEENEEG007A	Select and arrange equipment for general electrical installations
UEENEEG015A	Find and rectify faults in energy supply network equipment
UEENEEG052A	Rewind single phase induction machines
UEENEEG053A	Rewind three phase induction machines rated for low voltage
UEENEEG054A	Rewind direct current machines rated for low voltage
UEENEEH006A	Assemble and set up fixed audio/video components and systems in buildings and premises
UEENEEH010A	Install commercial audio/video system components
UEENEEH017A	Carry out repairs of predictable faults in audio and video replay/recording apparatus
UEENEEH019A	Carry out repairs of predictable faults in television receivers
UEENEEH021A	Find and repair faults in high volume office equipment
UEENEEH071A	Find and repair faults in television receivers
UEENEEH072A	Find and repair faults in the RF sections of electronic apparatus
UEENEEH073A	Find and repair faults in professional audio reproduction components
UEENEEH074A	Find and repair faults in audio/video recording equipment
UEENEEI006A	Solve problems in process controllers, transmitters and converters
UEENEEI009A	Set up process measuring and control instruments
UEENEEJ010A	Select refrigerant pipe/tube, accessories and associated controls
UEENEEJ053A	Find and rectify faults in appliance motors and associated controls
UEENEEK017A	Maintain and repair facilities associated with remote area essential services operation
UEENEEK018A	Maintain operation of remote area water facilities

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Schedule 3 – Strand 6 Electives

UEENEEK020A Maintain operation of remote area power plant

Strand 5

Schedule 3 – Strand 5 Electives

UEENEEH051A Install large wired and wireless security systems

Strand 4 Competency Standard units

Schedule 3 – Strand 4 Electives

UEENEEG016A	Diagnose and rectify faults in lifts systems
UEENEEG026A	Install and maintain field power and distribution systems with a LV demand up to 200 A per phase
UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH018A	Find and repair faults in electronic apparatus
UEENEEH020A	Find and repair faults in gaming and games equipment
UEENEEH027A	Commission commercial radio frequency (RF) transmission and reception systems
UEENEEH046A	Solve fundamental problems in electronic communications systems
UEENEEI013A	Select equipment for process control systems
UEENEEJ057A	Service electric heating appliances
UEENEEK019A	Maintain operation of remote area waste water facilities
UEENEEK023A	Carry out basic repairs to renewable energy apparatus by replacement of components
UEENEEK025A	Solve basic problems in photovoltaic energy apparatus
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply

Strand 3

Schedule 3 – Strand 3 Electives

UEENEEA012A	Make up and assemble bus bars
UEENEEA013A	Assemble and wire control panels
UEENEED004A	Use engineering applications software
UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set
UEENEED027A	Develop structured programs for control sub systems to access external devices
UEENEED031A	Develop and validate basic integrated systems
UEENEED043A	Install and configure a computer operating system and software
UEENEED046A	Set up and configure basic local area network
UEENEEF009A	Install and connect voice and data communications equipment
UEENEEF011A	Test, report and rectify faults in voice and data installations
UEENEEG010A	Find and repair faults in d.c. electrical apparatus and circuits
UEENEEG013A	Install and maintain emergency systems.
UEENEEG018A	Maintain operation of electrical mining equipment
UEENEEG019A	Maintain the operation of electrical marine equipment
UEENEEG020A	Select and arrange equipment for special electrical installations
UEENEEG029A	Overhaul and repair switchgear/controlgear

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Schedule 3 – Strand 3 Electives

UEENEEG055A	Rewind three phase induction machines rated for high voltage to 3.3 kV
UEENEEG056A	Rewind three phase induction machines rated for high voltage above 3.3 kV
UEENEEG058A	Conduct electrical tests on high voltage electrical machines
UEENEEG064A	Repair mechanical components of electrical machines
UEENEEH015A	Solve problems in microprocessor based hardware and firmware
UEENEEH016A	Find and repair faults in the microwave amplifier sections of electronic apparatus
UEENEEH022A	Find and repair faults in remote control apparatus
UEENEEH054A	Program and commission commercial security alarm systems
UEENEEH055A	Program and commission commercial security access control systems
UEENEEH056A	Program and commission commercial security closed circuit television (CCTV) systems
UEENEEI014A	Find and rectify faults in process control systems
UEENEEJ005A	Position, assemble and start up split air conditioning systems
UEENEEJ051A	Service small appliances and power tools
UEENEEJ054A	Find and rectify faults in appliance control devices and systems
UEENEEJ055A	Service refrigerated appliances
UEENEEM004A	Install explosion-protected equipment and wiring systems
UEENEEM006A	Maintain equipment in hazardous areas
UEENEEM007A	Overhaul and repair explosion-protected equipment
UEENEEP004A	Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply
UEENEEP005A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles

Strand 2

Schedule 3 – Strand 2 Electives

UEENEEA003A	Set up and check electronic component placement machines
UEENEEA004A	Rework electronic sub assemblies
UEENEEA006A	Apply lead-free soldering techniques
UEENEED029A	Develop basic web pages for engineering applications
UEENEED030A	Select, install, configure and test multimedia devices
UEENEED053A	Set up and test biometric devices
UEENEEE019A	Solve problems in multiple path a.c. circuits
UEENEEE021A	Plan an integrated cabling system
UEENEEF004A	Install and modify performance data communication structured cabling
UEENEEF005A	Install and modify performance data communication optical fibre cabling
UEENEEF007A	Set up wireless capabilities of communications and data storage devices
UEENEEF012A	Install aerial communication cables
UEENEEF013A	Install below ground communication cables
UEENEEF016A	Set up and configure basic data communications systems

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Schedule 3 – Strand 2 Electives

UEENEEG017A	Install electrical power and control equipment for rail network signalling
UEENEEG021A	Verify compliance and functionality of special electrical installations
UEENEEG025A	Plan electrical installations with a LV demand up to 400A per phase
UEENEEG028A	Plan switchboard and control panel layouts
UEENEEG034A	Perform high voltage field switching to a given schedule
UEENEEG057A	Conduct electrical tests on low voltage electrical machines
UEENEEG059A	Conduct mechanical tests of electrical machines
UEENEEG062A	Set up and place electrical apparatus and associated circuits into service
UEENEEG065A	Maintain and service traction lifts
UEENEEG066A	Installation and maintenance of escalators, moving walks and tread ways
UEENEEG067A	Align and Install Lift Equipment
UEENEEH005A	Verify compliance and functionality of custom electronic installations
UEENEEH007A	Carry out repairs of predictable faults in general electronic apparatus
UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH023A	Find and repair faults in microwave heating apparatus
UEENEEH024A	Carry out repairs of predictable faults in audio components
UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039A	Solve problems in basic amplifier circuits
UEENEEH042A	Solve problems in oscillator sections of electronic apparatus
UEENEEH052A	Enter instructions and test basic wired and wireless security systems
UEENEEH063A	Enter and verify programs in preparation for commissioning fire protection systems
UEENEEH064A	Commission commercial fire protection systems
UEENEEH065A	Find and repair faults in fire protection systems
UEENEEH066A	Fault find Microcontroller based hardware
UEENEEI001A	Install and set up transducers and sensing devices
UEENEEI002A	Solve problems in pressure measurement systems
UEENEEI003A	Solve problems in density/level measurement systems
UEENEEI004A	Solve problems in flow measurement systems
UEENEEI005A	Solve problems in temperature measurement systems
UEENEEI007A	Install process instrumentation and control cabling and tubing
UEENEEI008A	Install process control apparatus and associated equipment
UEENEEI010A	Set up and adjust process control loops
UEENEEI011A	Find and rectify faults in process control valve and associated equipment
UEENEEI012A	Verify compliance and functionality of process control installations
UEENEEI017A	Calibrate and test measuring instruments
UEENEEJ002A	Prepare refrigeration tubing and fittings
UEENEEJ003A	Determine the basic operating conditions of vapour compression systems
UEENEEJ004A	Determine the basic operating conditions of air conditioning systems
UEENEEJ015A	Solve problems in beverage dispensers

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Schedule 3 – Strand 2 Electives

UEENEEJ016A	Solve problems in transport refrigeration systems
UEENEEJ020A	Solve problems in industrial refrigeration systems
UEENEEJ056A	Service clothes washers and dryers
UEENEEJ058A	Service dish washing machines
UEENEEJ059A	Service gas appliances
UEENEEJ060A	Service room air conditioners
UEENEEJ061A	Verify compliance and functionality of appliances
UEENEEJ073A	Service microwave ovens
UEENEEK007A	Conduct audits in the demand side use of remote area power supplies
UEENEEK008A	Plan periodic maintenance schedules of remote area power supplies
UEENEEK026A	Install and set up grid connected photovoltaic power systems
UEENEEM009A	Test installations in hazardous areas
UEPOPS234A	Perform Routine Oxyacetylene (Fuel Gas) Welding
UEPOPS235A	Perform Routine Manual Arc Welding
UEPOPS236A	Perform Manual Heating, Thermal Cutting and Gouging
ICTTC056	Install telecomm network equipment.
UETTDRIS04A	Perform high voltage field switching operation to a given schedule

Strand 1

Schedule 3 – Strand 1 Electives

UEENEEA002A	Select electronic components
UEENEEA005A	Conduct functional and quality tests on assembled electronic apparatus
UEENEEE005A	Fix and secure equipment
UEENEEF001A	Lay and connect cabling for direct access to telecommunication services
UEENEEJ014A	Solve problems in hydronic systems
UEENEEJ017A	Solve problems in ultra-low temperature refrigeration systems
UEENEEJ018A	Solve problems in post mix refrigeration systems
UEENEEJ019A	Solve problems in ice making systems
UEENEEJ052A	Carry out repairs to appliance refrigeration systems
UEENEEJ066A	Solve problems in diary refrigeration systems
UEENEEJ067A	Solve problems in central air conditioning systems
UEENEEJ068A	Maintain microbial control of air and water systems
UEENEEJ071A	Solve problems in refrigerated beverage vending cabinets
UEENEEK009A	Attend to breakdowns in remote area power supplies
UEENEEK024A	Assemble and set up photovoltaic apparatus in domestic dwellings
UEENEEK037A	Install and set up micro-hydro systems
UEENEEM002A	Attend to breakdowns in hazardous areas
UEENEEM003A	Use and maintain the integrity of portable gas detection devices
UEENEEM005A	Install and maintain integrity of fixed gas detection equipment
UEENEEM010A	Conduct close inspection of existing hazardous areas installations
UEENEEN002A	Assemble and wire internal electrical signalling equipment
UEENEEN003A	Install and maintain track circuit leads and bonds
UEENEEN004A	Perform cable tests
UEENEEN005A	Install and maintain signalling power supplies
UEENEEN008A	Maintain on-site power operated point-activating devices

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Schedule 3 – Strand 1 Electives

UEENEEN009A	Maintain track circuits equipment
UEENEEN011A	Install and maintain power operated signalling equipment
UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures

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Schedule of Electives – 4

Competency standard units have been put into strands to facilitate work outcomes for the qualification, as specified by industry stakeholders. This design feature has been developed to enhance flexibility for enterprise outcomes.

The following dot points provide examples on the use of the Schedule in selecting appropriate Competency Standard Units to complete the Elective requirements of the qualification:

- 1 unit from strand 6, gives a unit strand total of 6
- 2 units from strand 3, gives a unit strand total of 6
- 1 unit from strand 5 PLUS 1 unit from strand 1, gives a unit strand total of 6

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

Strand 6

Schedule 4 – Strand 6 Electives

UEENEEA010A	Assemble, mount and connect switchgear and controlgear
UEENEED012A	Support computers hardware and software
UEENEED017A	Install and configure Internetworking systems
UEENEED024A	Integrate multiple computer operating systems on a client server network
UEENEED054A	Analyse and implement biometric techniques and applications
UEENEEF010A	Select and arrange equipment for local area networks
UEENEEG007A	Select and arrange equipment for general electrical installations
UEENEEG015A	Find and rectify faults in energy supply network equipment
UEENEEH017A	Carry out repairs of predictable faults in audio and video replay/recording apparatus
UEENEEH019A	Carry out repairs of predictable faults in television receivers
UEENEEH031A	Diagnose and rectify faults in radar apparatus and systems
UEENEEH034A	Diagnose and rectify faults in electronic medical equipment
UEENEEH035A	Design custom electronic installations
UEENEEH036A	Design commercial audio/video installations
UEENEEH040A	Diagnose and rectify faults in sonar apparatus and systems
UEENEEH053A	Program and test large wired and wireless security systems
UEENEEH071A	Find and repair faults in television receivers
UEENEEH072A	Find and repair faults in the RF sections of electronic apparatus
UEENEEH073A	Find and repair faults in professional audio reproduction components
UEENEEH074A	Find and repair faults in audio/video recording equipment
UEENEEI006A	Solve problems in process controllers, transmitters and converters
UEENEEI009A	Set up process measuring and control instruments
UEENEEI015A	Find and rectify faults in medical equipment control systems

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Schedule 4 – Strand 6 Electives

UEENEEJ063A	Analyse the psychrometric and thermodynamic performance of HVAC/R systems
UEENEEJ064A	Analyse the operation of HVAC/R systems

Strand 5

Schedule 4 – Strand 5 Electives

UEENEEJ012A	Diagnose and rectify faults in complex refrigeration/air conditioning systems
UEENEEJ023A	Commission complex heating, ventilation and air conditioning (HVAC) systems
UEENEEJ027A	Determine thermodynamic parameters of refrigeration and air conditioning systems

Strand 4

Schedule 4 – Strand 4 Electives

UEENEED013A	Install and administer Unix based computers
UEENEED015A	Administer user networks
UEENEEG014A	Develop plans and compliance policies to conduct a contracting business
UEENEEG016A	Diagnose and rectify faults in lifts systems
UEENEEG026A	Install and maintain field power and distribution systems with a LV demand up to 200A per phase
UEENEEH020A	Find and repair faults in gaming and games equipment
UEENEEH027A	Commission commercial radio frequency (RF) transmission and reception systems
UEENEEH079A	Diagnose and rectify faults in digital television apparatus
UEENEEH080A	Diagnose and rectify faults in digital transmission systems
UEENEEI013A	Select equipment for process control systems
UEENEEI026A	Provide solutions to pneumatic/hydraulic system operations
UEENEEI027A	Analyse complex electronic circuits controlling fluids
UEENEEJ022A	Diagnose faults in complex refrigeration or heating, ventilation and air conditioning control systems
UEENEEJ024A	Commission hydronic systems for refrigeration and air conditioning systems
UEENEEJ025A	Commission complex refrigeration systems
UEENEEJ026A	Commission complex control systems for refrigeration and air conditioning systems
UEENEEJ028A	Produce HVAC/R design drawings
UEENEEJ029A	Determine the heat loads for commercial refrigeration and air conditioning applications
UEENEEK023A	Carry out basic repairs to renewable energy apparatus by replacement of components
UEENEEK025A	Solve basic problems in photovoltaic energy apparatus
ICTTC083	Locate and rectify complex CPE fault (PABX repair)
ICTTC088	Locate and rectify network faults

Strand 3

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Schedule 4 – Strand 3 Electives

UEENEED004A	Use engineering applications software
UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set
UEENEED008A	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems
UEENEED009A	Develop, enter and verify programs for industrial control systems using high level instructions
UEENEED027A	Develop structured programs for control sub systems to access external devices
UEENEED031A	Develop and validate basic integrated systems
UEENEED032A	Design integrated systems
UEENEED033A	Design complex integrated systems
UEENEED034A	Configure and maintain industrial control system networks
UEENEEE010A	Develop and implement maintenance programs
UEENEEE018A	Establish, maintain and evaluate OHS systems
UEENEEF008A	Select and arrange equipment for wireless networks
UEENEEF009A	Install and connect voice and data communications equipment
UEENEEF011A	Test, report and rectify faults in voice and data installations
UEENEEG010A	Find and repair faults in d.c. electrical apparatus and circuits
UEENEEG013A	Install and maintain emergency systems.
UEENEEG018A	Maintain operation of electrical mining equipment
UEENEEG019A	Maintain operation of electrical marine equipment
UEENEEG020A	Select and arrange equipment for special electrical installations
UEENEEG022A	Conduct compliance inspection of single phase electrical installations
UEENEEG024A	Conduct compliance inspection of special electrical installations
UEENEEG029A	Overhaul and repair switchgear/controlgear
UEENEEG032A	Carry out electrical field testing and report findings
UEENEEG037A	Diagnose and rectify faults in energy supply apparatus
UEENEEG038A	Diagnose and rectify faults in electrical energy distribution systems
UEENEEG039A	Diagnose and rectify faults in distributed generation systems
UEENEEG042A	Diagnose and rectify faults in electrical energy supply transmission systems
UEENEEG047A	Provide computational solutions to power engineering problems
UEENEEG048A	Solve problems in complex multiple path power circuits
UEENEEG055A	Rewind three phase induction machines rated for high voltage to 3.3 kV
UEENEEG056A	Rewind three phase induction machines rated for high voltage above 3.3 kV
UEENEEG058A	Conduct electrical tests on high voltage electrical machines
UEENEEG064A	Repair mechanical components of electrical machines
UEENEEG072A	Investigate and report on electrical incidents
UEENEEH022A	Find and repair faults in remote control apparatus
UEENEEH025A	Provide solutions to single phase electronic power control problems
UEENEEH026A	Provide solutions to polyphase electronic power control problems
UEENEEH029A	Diagnose and rectify faults in navigation systems

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Schedule 4 – Strand 3 Electives

UEENEEH030A	Diagnose and rectify faults in satellite-based surveillance and observation systems
UEENEEH032A	Diagnose and rectify faults in global positioning systems
UEENEEH033A	Diagnose and rectify faults in telecommunication apparatus and systems
UEENEEH043A	Diagnose and rectify faults in digital subsystems of electronic controls
UEENEEH044A	Diagnose and rectify faults in analogue circuits and components in electronic control systems
UEENEEH045A	Develop solutions to analogue electronic problems
UEENEEH054A	Program and commission commercial security alarm systems
UEENEEH055A	Program and commission commercial security access control systems
UEENEEH056A	Program and commission commercial security closed circuit television (CCTV) systems
UEENEEH075A	Find and rectify faults and malfunctions in security system installations
UEENEEH076A	Diagnose and rectify faults in display circuits
UEENEEH077A	Diagnose and rectify faults in recording and replay apparatus
UEENEEH078A	Diagnose and rectify faults in camera circuits
UEENEEI014A	Find and rectify faults in process control systems
UEENEEI019A	Set up field control devices
UEENEEI020A	Provide solutions to problems in basic industrial control systems
UEENEEI025A	Provide solutions to fluid circuit operations
UEENEEK027A	Diagnose faults in renewable energy control systems
UEENEEK028A	Solve problems in stand-alone renewable energy systems
UEENEEK030A	Solve problems in wind energy conversion systems
UEENEEK038A	Design micro-hydro systems

Strand 2

Schedule 4 – Strand 2 Electives

UEENEEC004A	Prepare specifications for the supply of materials and equipment for electrotechnology projects
UEENEEC005A	Estimate electrotechnology projects
UEENEED003A	Evaluate and modify programs written in object oriented code
UEENEED030A	Select, install, configure and test multimedia devices
UEENEED053A	Set up and test biometric devices
UEENEEE014A	Supervise and coordinate work activities
UEENEEE021A	Plan an integrated cabling system
UEENEEF003A	Install and maintain cabling for telecommunication services in lifts
UEENEEF004A	Install and modify performance data communication structured cabling
UEENEEF005A	Install and modify performance data communication optical fibre cabling
UEENEEF012A	Install aerial communication cables
UEENEEF013A	Install below ground communication cables
UEENEEF016A	Set up and configure basic data communications systems

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Schedule 4 – Strand 2 Electives

UEENEEG017A	Install electrical power and control equipment for rail network signalling
UEENEEG021A	Verify compliance and functionality of special electrical installations
UEENEEG023A	Conduct compliance inspection of electrical installations with demand exceeding 100 A per phase
UEENEEG025A	Plan electrical installations with a LV demand up to 400 A per phase
UEENEEG027A	Design electrical installations with a LV demand greater than 400 A per phase
UEENEEG028A	Plan switchboard and control panel layouts
UEENEEG034A	Perform high voltage field switching to a given schedule
UEENEEG057A	Conduct electrical tests on low voltage electrical machines
UEENEEG059A	Conduct mechanical tests of electrical machines
UEENEEG060A	Evaluate performance of electrical machines
UEENEEG062A	Set up and place electrical apparatus and associated circuits into service
UEENEEG065A	Maintain and service traction lifts
UEENEEG066A	Installation and maintenance of escalators, moving walks and tread ways
UEENEEG067A	Align and Install Lift Equipment
UEENEEG068A	Diagnose and rectify faults in complex lifts systems
UEENEEH007A	Carry out repairs of predictable faults in general electronic apparatus
UEENEEH024A	Carry out repairs of predictable faults in audio components
UEENEEH037A	Program and commission commercial audio/video systems
UEENEEH057A	Develop basic integrated security systems plan
UEENEEH064A	Commission commercial fire protection systems
UEENEEH065A	Find and repair faults in fire protection systems
UEENEEH081A	Design printed circuit boards
UEENEEI001A	Install and set up transducers and sensing devices
UEENEEI002A	Solve problems in pressure measurement systems
UEENEEI003A	Solve problems in density/level measurement systems
UEENEEI004A	Solve problems in flow measurement systems
UEENEEI005A	Solve problems in temperature measurement systems
UEENEEI007A	Install process instrumentation and control cabling and tubing
UEENEEI008A	Install process control apparatus and associated equipment
UEENEEI010A	Set up and adjust process control loops
UEENEEI011A	Find and rectify faults in process control valve and associated equipment
UEENEEI012A	Verify compliance and functionality of process control installations
UEENEEI017A	Calibrate and test measuring instruments
UEENEEI021A	Find and repair faults in measuring and analysis systems
UEENEEI022A	Assist in commissioning process control systems
UEENEEJ014A	Solve problems in hydronic systems
UEENEEJ015A	Solve problems in beverage dispensers
UEENEEJ016A	Solve problems in transport refrigeration systems

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Schedule 4 – Strand 2 Electives

UEENEEJ018A	Solve problems in post mix refrigeration systems
UEENEEJ019A	Solve problems in ice making systems
UEENEEJ020A	Solve problems in industrial refrigeration systems
UEENEEJ021A	Monitor and adjust energy management systems on refrigeration systems
UEENEEJ030A	Produce HVAC/R control system design diagrams
UEENEEJ066A	Solve problems in diary refrigeration systems
UEENEEJ067A	Solve problems in central air conditioning systems
UEENEEJ068A	Maintain microbial control of air and water systems
UEENEEK026A	Install and set up grid connected photovoltaic power systems
UEENEEM008A	Assess explosion-protected equipment for compliance with standards
UEENEEM009A	Test installations in hazardous areas
UEENEEM011A	Conduct detailed inspection of hazardous areas installations
ICTTC085	Monitor, analyse and action alarms
UETTDRIS04A	Perform high voltage field switching operation to a given schedule

Strand 1

Schedule 4 – Strand 1 Electives

UEENEED005A	Enter and verify operating instructions in microprocessor equipped devices
UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEG071A	Install and set up interval metering
UEENEEK010A	Coordinate maintenance of renewable energy apparatus and systems
UEENEEK032A	Develop strategies to address sustainability issues
UEENEEK037A	Install and set up micro-hydro systems
UEENEEJ017A	Solve problems in ultra-low temperature refrigeration systems
UEENEEM010A	Conduct close inspection of existing hazardous areas installations
UEENEEM012A	Develop and manage maintenance programs for hazardous areas electrical equipment
UEENEEM013A	Ensure the safety of hazardous areas
UEENEEM016A	Design electrical installations in hazardous areas
UEENEEN001A	Service mechanical signalling equipment and infrastructure
UEENEEN002A	Assemble and wire internal electrical signalling equipment
UEENEEN003A	Install and maintain track circuit leads and bonds
UEENEEN004A	Perform cable tests
UEENEEN005A	Install and maintain signalling power supplies
UEENEEN006A	Maintain remote control and non-vital interlocking control systems
UEENEEN007A	Maintain power signalling and protected level crossing equipment
UEENEEN008A	Maintain on-site power operated point-activating devices
UEENEEN009A	Maintain track circuits equipment
UEENEEN010A	Maintain electronic signalling and communication equipment
UEENEEN011A	Install and maintain power operated signalling equipment
UEENEEN012A	Maintain power signalling and protective relay interlocking systems
UEENEEN013A	Install and test computer based interlocking equipment
UEENEEN014A	Maintain computer based and solid state interlocking equipment

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Schedule 4 – Strand 1 Electives

UEENEEN015A	Conduct routine inspecting and testing of new signal cables and lines
UEENEEN016A	Maintain electronic switched and microprocessor-based remote control systems
UEENEEN017A	Install and maintain transmission interface equipment
UEENEEN018A	Find and repair cable system faults
UEENEEN019A	Test equipment and isolate faults
UEENEEN020A	Install electrical power and control equipment for rail networks
UEENEEN025A	Coordinate and manage track protection
UEENEEN026A	Develop rail signalling maintenance programmes
UEENEEN027A	Decommission electrical and electro-mechanical signalling from service
UEENEEN028A	Test and Commission Power Signalling Equipment

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Schedule of Electives – 5

Competency standard units have been put into strands to facilitate work outcomes for the qualification, as specified by industry stakeholders. This design feature has been developed to enhance flexibility for enterprise outcomes.

The following dot points provide examples on the use of the Schedule in selecting appropriate Competency Standard Units to complete the Elective requirements of the qualification:

- 1 unit from strand 6, gives a unit strand total of 6
- 2 units from strand 3, gives a unit strand total of 6
- 1 unit from strand 5 PLUS 1 unit from strand 1, gives a unit strand total of 6

Notes :

1. All prerequisites must be met prior to completing each competency standard unit.
2. Where a competency standard unit is achieved as part of the core of a qualification it shall not be used again for selection as an elective unit.

Strand 8

Schedule 5 – Strand 8 Electives

UEENEED018A	Design and implement internetworking systems

Strand 7

Schedule 5 – Strand 7 Electives

UEENEED011A	Create object oriented code

Strand 6

Schedule 5 – Strand 6 Electives

UEENEED010A	Set up and create content for a web server
UEENEED016A	Develop network services
UEENEED051A	Provide programming solution for engineering problems
UEENEED052A	Design embedded controller systems
UEENEED054A	Analyse and implement biometric techniques and applications
UEENEED055A	Develop and validate biometric systems installation instructions
UEENEEH031A	Diagnose and rectify faults in radar apparatus and systems
UEENEEH034A	Diagnose and rectify faults in electronic medical equipment
UEENEEH035A	Design custom electronic installations
UEENEEH036A	Design commercial audio/video installations
UEENEEH053A	Program and test large wired and wireless security systems
UEENEEI015A	Find and rectify faults in medical equipment control systems
UEENEEJ033A	Design industrial refrigeration systems
UEENEEJ065A	Evaluate fluid and thermodynamic parameters of refrigeration systems
UEENEEK029A	Design renewable energy heating systems
UEENEEK035A	Design grid connected power supply systems
UEENEEK041A	Develop strategies for effective energy reduction in buildings

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Schedule 5 – Strand 6 Electives

UEENEER001A	Contribute to the planning of a research project
UEENEER002A	Contribute to the conduct of a research project
UEENEER003A	Contribute to the development of a Product/Application/Service
UEENEER004A	Contribute to the trial of a Product/Application/Service
UEENEER005A	Contribute to Intellectual Property Management
UEENEER006A	Contribute to the commercialisation of a Product/Application/Service

Strand 5

Schedule 5 – Strand 5 Electives

UEENEEE060A	Provide solutions for uses of materials and thermodynamic effects
UEENEED019A	Design and implement internetworking systems – advanced routing

Strand 4

Schedule 5 – Strand 4 Electives

UEENEEE061A	Analyse static and dynamic parameters of equipment
UEENEEE062A	Select drive components for equipment design
UEENEEE063A	Analyse materials for suitability in equipment
UEENEEE064A	Design machine drives and production layout plans
UEENEEH048A	Design and develop advanced digital systems
UEENEEI026A	Provide solutions to pneumatic/hydraulic system operations
UEENEEI027A	Analyse complex electronic circuits controlling fluids
UEENEEJ031A	Provide solutions to vibration problems in HVAC/R system design
UEENEEJ032A	Design commercial refrigeration systems
UEENEEJ034A	Design heating, ventilation and air conditioning (HVAC) systems
UEENEEJ035A	Design control systems for a heating, ventilation, air conditioning or refrigeration system
UEENEEJ036A	Evaluate and report on energy management
UEENEEK033A	Design set up hybrid power systems

Strand 3

Schedule 5 – Strand 3 Electives

UEENEEC006A	Prepare tender submissions for electrotechnology projects
UEENEED008A	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems
UEENEED009A	Develop, enter and verify programs for industrial control systems using high level instructions
UEENEED025A	Design and configure Human-Machine Interface networks
UEENEED028A	Develop and test basic specification for microcontroller equipped devices
UEENEED033A	Design complex integrated systems
UEENEED034A	Configure and maintain industrial control system networks
UEENEED050A	Develop control programs for microcomputer equipped devices
UEENEEE010A	Develop and implement maintenance programs
UEENEEE018A	Establish, maintain and evaluate OHS systems
UEENEEG030A	Design switchboards rated for high fault levels

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Schedule 5 – Strand 3 Electives

UEENEEG032A	Carry out electrical field testing and report findings
UEENEEG035A	Diagnose and rectify faults in a.c. motor drive systems
UEENEEG036A	Diagnose and rectify faults in d.c. motor drive systems
UEENEEG037A	Diagnose and rectify faults in energy supply apparatus
UEENEEG038A	Diagnose and rectify faults in electrical energy distribution systems
UEENEEG039A	Diagnose and rectify faults in distributed generation systems
UEENEEG040A	Develop engineering solutions for energy supply power transformer problems
UEENEEG041A	Diagnose and rectify faults in servo drive systems
UEENEEG042A	Diagnose and rectify faults in electrical energy supply transmission systems
UEENEEG043A	Develop engineering solution for synchronous machine problems
UEENEEG044A	Develop engineering solutions for d.c. machine problems
UEENEEG045A	Develop engineering solutions for induction motor problems
UEENEEG046A	Develop engineering solutions for energy supply system protection problems
UEENEEG047A	Provide computational solutions to power engineering problems
UEENEEG048A	Solve problems in complex multiple path power circuits
UEENEEG049A	Solve problems in complex polyphase power circuits
UEENEEG061A	Design and develop modifications to electrical machines
UEENEEG072A	Investigate and report on electrical incidents
UEENEEH025A	Provide solutions to single phase electronic power control problems
UEENEEH026A	Provide solutions to polyphase electronic power control problems
UEENEEH030A	Diagnose and rectify faults in satellite-based surveillance and observation systems
UEENEEH032A	Diagnose and rectify faults in global positioning systems
UEENEEH033A	Diagnose and rectify faults in telecommunication apparatus and systems
UEENEEH044A	Diagnose and rectify faults in analogue circuits and components in electronic control systems
UEENEEH049A	Develop solutions to audio electronic problems
UEENEEH059A	Design integrated complex security systems
UEENEEI019A	Set up field control devices
UEENEEI020A	Provide solutions to problems in basic industrial control systems
UEENEEI023A	Design electronic control systems
UEENEEI025A	Provide solutions to fluid circuit operations
UEENEEK027A	Diagnose faults in renewable energy control systems
UEENEEK028A	Solve problems in stand-alone renewable energy systems
UEENEEK030A	Solve problems in wind energy conversion systems
UEENEEK031A	Design wind energy conversion systems rated to 10 kW.
UEENEEK038A	Design micro-hydro systems

Strand 2

Schedule 5 – Strand 2 Electives

UEENEED003A	Evaluate and modify programs written in object oriented code
UEENEEE015A	Develop design briefs for electrotechnology projects

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Schedule 5 – Strand 2 Electives

UEENEEE016A	Write specifications for electrotechnology projects
UEENEEG027A	Design electrical installations with a LV demand greater than 400 A per phase
UEENEEG031A	Evaluate performance of electrical apparatus
UEENEEG060A	Evaluate performance of electrical machines
UEENEEG068A	Diagnose and rectify faults in complex lifts systems
UEENEEH057A	Develop basic integrated security systems plan
UEENEEH058A	Design integrated security systems for a single site
UEENEEH082A	Develop solutions to RF amplifiers problems
UEENEEH083A	Analyse the performance of wireless-based electronic systems
UEENEEI022A	Assist in commissioning process control systems
UEENEEJ037A	Evaluate and report on air quality in buildings
UEENEEK039A	Design stand-alone renewable energy systems
UEENEEM014A	Design and develop modifications to explosion-protected equipment
BSBCMN306A	Produce business documents
BSBSBM405A	Monitor and manage business operations
PMBQUAL390A	Solve problems using ‘quality tools’

Strand 1

Schedule 5 – Strand 1 Electives

UEENEEK032A	Develop strategies to address sustainability issues
UEENEEM016A	Design electrical installations in hazardous areas

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Schedule of Electives – 6

Competency standard units have been put into strands to facilitate work outcomes for the qualification, as specified by industry stakeholders. This design feature has been developed to enhance flexibility for enterprise outcomes.

The following dot points provide examples on the use of the Schedule in selecting appropriate Competency Standard Units to complete the Elective requirements of the qualification:

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- 2 units from strand 3, gives a unit strand total of 6
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Notes:

1. All prerequisites must be met prior to completing each competency standard unit.
2. Where a competency standard unit is achieved as part of the core of a qualification it shall not be used again for selection as an elective unit.

Strand 8

Schedule 6 – Strand 8 Electives

UEENEED018A	Design and implement internetworking systems

Strand 7

Schedule 6 – Strand 7 Electives

Nil

Strand 6

Schedule 6 – Strand 6 Electives

UEENEED016A	Develop network services
UEENEED026A	Design a computer based control system
UEENEED051A	Provide programming solution for engineering problems
UEENEED052A	Design embedded controller systems
UEENEED055A	Develop and validate biometric systems installation instructions
UEENEEE027A	Use advanced computational processes to provide solutions to engineering problems
UEENEEH084A	Design DSP-based systems
UEENEEJ043A	Design complex air conditioning systems
UEENEEJ045A	Design hydronic systems
UEENEEJ048A	Audit HVAC/R control systems for compliance with standards and regulations
UEENEEK029A	Design renewable energy heating systems
UEENEEK035A	Design grid connected power supply systems
UEENEEK041A	Develop strategies for effective energy reduction in buildings
UEENEER001A	Contribute to the planning of a research project
UEENEER002A	Contribute to the conduct of a research project
UEENEER003A	Contribute to the development of a Product/Application/Service

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Schedule 6 – Strand 6 Electives

UEENEER004A	Contribute to the trial of a Product/Application/Service
UEENEER005A	Contribute to Intellectual Property Management
UEENEER006A	Contribute to the commercialisation of a Product/Application/Service

Strand 5

Schedule 6 – Strand 5 Electives

UEENEED019A	Design and implement internetworking systems – advanced routing
UEENEED020A	Design and implement internetworking systems – remote access
UEENEED021A	Design and implement internetworking systems – multi-layer switching
UEENEED022A	Design and implement internetworking systems – security
UEENEED023A	Design and implement internetworking systems – wireless LANs/WANs
UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE060A	Provide solutions for uses of materials and thermodynamic effects

Strand 4

Schedule 6 – Strand 4 Electives

UEENEED014A	Design and manage enterprise networks
UEENEEE028A	Develop engineering solutions to photonic problems
UEENEEE061A	Analyse static and dynamic parameters of equipment
UEENEEE062A	Select drive components for equipment design
UEENEEE063A	Analyse materials for suitability in equipment
UEENEEE064A	Design machine drives and production layout plans
UEENEEH048A	Design and develop advanced digital systems
UEENEEH085A	Design electronic data acquisition systems
UEENEEI028A	Set up controls on complex fluid systems
UEENEEI029A	Set up electronically controlled mechanically operated complex systems
UEENEEI030A	Set up electronically controlled robotically operated complex systems
UEENEEJ046A	Design complex control systems for a heating, ventilation, air conditioning or refrigeration system
UEENEEJ049A	Develop specifications for heat exchange designs
UEENEEK033A	Design set up hybrid power systems

Strand 3

Schedule 6 – Strand 3 Electives

UEENEED025A	Design and configure Human-Machine Interface networks
UEENEED028A	Develop and test basic specification for microcontroller equipped devices
UEENEED048A	Plan computer systems projects
UEENEEE013A	Plan electrotechnology projects
UEENEED050A	Develop control programs for microcomputer equipped devices

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Schedule 6 – Strand 3 Electives

UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE029A	Solve electrotechnical problems
UEENEEG012A	Solve fundamental problems in electrical systems
UEENEEG030A	Design switchboards rated for high fault levels
UEENEEG035A	Diagnose and rectify faults in a.c. motor drive systems
UEENEEG036A	Diagnose and rectify faults in d.c. motor drive systems
UEENEEG040A	Develop engineering solutions for energy supply power transformer problems
UEENEEG041A	Diagnose and rectify faults in servo drive systems
UEENEEG043A	Develop engineering solution for synchronous machine problems
UEENEEG044A	Develop engineering solutions for d.c. machine problems
UEENEEG045A	Develop engineering solutions for induction motor problems
UEENEEG046A	Develop engineering solutions for energy supply system protection problems
UEENEEG049A	Solve problems in complex polyphase power circuits
UEENEEG061A	Design and develop modifications to electrical machines
UEENEEG070A	Plan electrical projects
UEENEEH047A	Assess compliance of electronic apparatus
UEENEEH049A	Develop solutions to audio electronic problems
UEENEEH060A	Plan electronic projects
UEENEEI023A	Design electronic control systems
UEENEEI035A	Plan control projects
UEENEEI037A	Plan automated systems projects
UEENEEJ039A	Develop specifications and prepare drawings for HVAC/R projects
UEENEEJ069A	Plan refrigeration and air conditioning projects
UEENEEK022A	Plan renewable energy projects
UEENEEK031A	Design wind energy conversion systems rated to 10 kW.
UEENEEK040A	Develop engineering solution to renewable energy problems

Strand 2

Schedule 6 – Strand 2 Electives

UEENEEC007A	Manage contract variations
UEENEED047A	Manage computer projects
UEENEEE012A	Manage electrotechnology projects
UEENEEE015A	Develop design briefs for electrotechnology projects
UEENEEG069A	Manage electrical projects
UEENEEH041A	Manage and implement electronic projects
UEENEEH070A	Terminate and connect components, conductors, wiring and cables for electronic circuits
UEENEEI034A	Manage control projects
UEENEEI036A	Manage automated systems projects
UEENEEJ040A	Manage refrigeration and air conditioning projects
UEENEEJ041A	Design complex commercial refrigeration systems
UEENEEJ042A	Design complex industrial refrigeration systems
UEENEEJ044A	Design mechanical ventilation/exhaust systems
UEENEEJ047A	Audit energy use for a commercial HVAC/R systems

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Schedule 6 – Strand 2 Electives

UEENEEJ050A	Evaluate alternative and new technologies applicable to electrotechnology applications
UEENEEK021A	Manage renewable energy projects
UEENEEK039A	Design stand-alone renewable energy systems
UEENEEM015A	Classify hazardous areas

Strand 1

Schedule 6 – Strand 1 Electives

UEENEEM017A	Design explosion-protected electrical systems
UEENEEM018A	Design gas detection systems

1.1.10 Possible Skill Clusters CSUs

The Competency Standard Units (CSUs) listed below may not be found in any of the qualification structures in this Training Package. However, they may appear within this section and/or within a qualification within this Training Package.

The units that appear in this section can be delivered and assessed independently of any qualification.

Typically, these CSUs relate to work functions that are associated with regulatory or specialised functions. They may augment or be incidental to existing competencies held by individuals, or be required for workplace entry associated with OHS issues.

Schedule of Possible Skill Clusters units

The Competency Standard Units in this schedule may be achieved independently of a qualification. All prerequisites and conditions are to be met for each unit.

Strand 6

UEENEEF002A	Lay and connect cables for multiple access to telecommunication services

Strand 5

nil

Strand 4

UEENEEG014A	Develop plans and compliance policies to conduct a contracting business
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply

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Strand 3

UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set
UEENEED031A	Develop and validate basic integrated systems
UEENEED032A	Design integrated systems
UEENEED033A	Design complex integrated systems
UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE029A	Solve electrotechnical problems
UEENEEE030A	Provide solutions to and report on routine electrotechnology problems
UEENEEM004A	Install explosion-protected equipment and wiring systems
UEENEEM006A	Maintain equipment in hazardous areas
UEENEEM007A	Overhaul and repair explosion-protected equipment
UEENEEP004A	Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply
UEENEEP005A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles

Strand 2

UEENEEA006A	Apply lead-free soldering techniques
UEENEEB001A	Operate and maintain an amateur radio communication station
UEENEEE008A	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE021A	Plan an integrated cabling system
UEENEEF004A	Install and modify performance data communication structured cabling
UEENEEF005A	Install and modify performance data communication optical fibre cabling
UEENEEF006A	Solve problems in data and voice communications circuits
UEENEEF012A	Install aerial communication cables
UEENEEF013A	Install below ground communication cables
UEENEEJ068A	Maintain microbial control of air and water systems
UEENEEM008A	Assess explosion-protected equipment for compliance with standards
UEENEEM009A	Test installations in hazardous areas
UEENEEM011A	Conduct detailed inspection of hazardous areas installations
UEENEEM014A	Design and develop modifications to explosion-protected equipment
UEENEEM01A	Classify hazardous areas
UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply
UEENEEP006A	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply

Strand 1

UEENEEE006A	Apply methods to maintain currency of industry developments
UEENEEF001A	Lay and connect cabling for direct access to telecommunication services
UEENEEG071A	Install and set up interval metering

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UEENEEM001A	Report on the integrity of explosion-protected equipment in hazardous areas
UEENEEM002A	Attend to breakdowns in hazardous areas
UEENEEM003A	Use and maintain the integrity of portable gas detection devices
UEENEEM005A	Install and maintain integrity of fixed gas detection equipment
UEENEEM012A	Develop and manage maintenance programs for hazardous areas electrical equipment
UEENEEM013A	Ensure the safety of hazardous areas
UEENEEM016A	Design electrical installations in hazardous areas
UEENEEM017A	Design explosion-protected electrical systems
UEENEEM018A	Design gas detection systems
UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply
UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures
UEENEEP008A	Conduct inservice safety testing of electrical cord assemblies and cord connected equipment

Core –

UEENEEE038A	Participate in development and follow a personal competency development plan

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ELECTROTECHNOLOGY TRAINING PACKAGE

UEE06
Volume 1 – Part 2
Competency Standards – Index

Volume 1 of 2

Electrotechnology Training Package UEE06 – Version Number 1. Review Date 31 Dec 2008

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Volume 1 Part 2

1.2.1 Competency Standards

This section explains competency, how competency standards are developed and the industry coverage they can apply to, and the format and construction of individual competency standard units.

What is competency?

A competency comprises the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance required in the workplace. This definition of competency standard includes:

- what is expected of an employee in the workplace rather than on the learning process and embodies the ability to transfer and apply skills and knowledge to new situations and environments
- an emphasis on outcomes and on the application of skills and knowledge, not just specification
- what people are able to do and their ability to do it in a range of contexts, eg maintain and use networks of suppliers, government agencies.

The broad concept of industry competency relates to demonstrated performance of specified tasks and duties, expected in the workplace to a given standard as expressed in industry standards. Competency requires the demonstrated application of specified skills and knowledge and the ability to transfer and apply the skills and knowledge to new situations and environments, relevant to effective participation in work for an industry, industry sector or enterprise.

Competency covers all aspects of workplace performance and involves performing individual tasks; managing a range of different tasks; responding to contingencies or breakdowns; and dealing with the responsibilities of the workplace including the work environment and working with others.

Work performance competency requires the demonstrated application of specified skills, knowledge and aptitudes consistently over time and to a quality standard in the workplace, and the ability to transfer it to new situations and environments. In line with this concept of competency, Training Packages describe the vocational standards for industry and focus on what is expected of a competent individual in the workplace. The measure is not what the individual/learner knows, but whether he/she has demonstrated knowledge and skill to the required standard in a range of situations and applications.

National Competency Standards

National Competency Standards are the benchmark for the National system of vocational education and training. National standards define the competencies required for effective performance in the workplace. Competency Standards are developed by industry parties and subsequently endorsed by the National Training Quality Council (NTQC). They form the keystone of the national vocational education and training system. The development, endorsement and ongoing review of Competency Standards provides a vehicle for industry parties to ensure the integrity and continuing relevance of national vocational education and training, both on and off-the-job.

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A competency-based system involves the delivery, assessment and certification of training. It is predicated on the identification and demonstrated attainment of the knowledge, the skills and the application required for effective performance in work. Hence the system is oriented towards outcomes rather than a traditional preoccupation with inputs.

Transferability

Transferability refers to the need for standards to be used in a range of different contexts within an industry or across industries. Development required the use of other endorsed industry or cross-industry standards where those standards were relevant. This supported the portability of standards and helped to reduce duplication of development. In general terms, the standards should be broad enough to be used across a range of settings, but flexible enough to be useful in any specific context.

Competency standards in Training Packages

Competency standards in Training Packages are determined by industry to meet identified industry skill needs.

The national concept of competency includes all aspects of work performance, not only narrow task skills. The four components of competency are:

- task skills
- task management skills
- contingency management skills
- job/role environment skills.

1.2.2 Competency Standard Units

Competency standards are made up of a number of competency standard units (CSUs) which describe a key function or role in a particular job function or occupation. While not every competency standard unit will contain all four components of competency, all four components should be covered effectively by a group of units. The four components of competency may emerge in the different parts of the standard format of a unit, ie Elements, Performance Criteria and Range Statement.

a) A combination of competency standard units must cover the four primary components of competency:

- task skills
- task management skills
- contingency management skills
- job/role environment skills.

b) Competency standards must be drafted to:

- avoid any direct or indirect bias or discrimination
- support participation by a diverse workforce
- encourage successful outcomes.

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c) When developing competency standards developers must incorporate other relevant industry or cross-industry standards in consultation with the original developer. If relevant standards are not used, the reason for this decision must be stated in the Training Package endorsement submission.

d) A single competency standard unit is the smallest competency achievement that can be nationally recognised and recorded.

e) The standards developed must be the result of an extensive consultation process and the application of sound development methodologies. Key stakeholders, both from within and outside the industry for which the standards were developed must validate the outcomes.

Issues associated with constructing competency standard units include:

- breadth
- unit size
- transferability
- interrelationships between units.

Breadth

In best practice, units:

- reflect a broad based expression of the application of knowledge and skills
- facilitate recognition and transferability of competencies while noting the requirements of the Australian Recognition Framework
- facilitate using skills and knowledge in a variety of locations and/or enterprises.

Unit size

Competency standard units must facilitate the recognition and assessment of the relevant skills and knowledge so the size of the unit will be determined by the complexity of those skills and knowledge, and the varying range of activities undertaken. Factors such as the perceived 'importance' of discrete functions within an industry or the time required for training are not considered indicators of appropriate unit size. Measures were introduced to attend to differences in unit size such as a weighting system for qualifications and completion requirements.

Development of the competency standard units also focused on the uses of the standards and the relative breadth required for flexible job construction. This meant consideration was given to constructing units so as not to be so broad that they contained functions that would not normally all be completed by one person, as competency in that unit could not normally be achieved. Alternatively, if units were too small, assessment would become inefficient as it would be repetitive and unnecessarily fragmented. At best, a balance between these two issues was achieved.

Interrelationship between units

Competency standard units have been constructed to facilitate the recognition, certification and transferability of skills. For these reasons units deal with discrete functions. At the same time, it is important in their construction/development to acknowledge the interdependence of units. In this Training Package, some closely

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related competencies emerged which were sufficiently discrete to warrant specification in separate units, but which logically benefited being assessed together.

Prerequisites have been designed so that concurrent training and formative assessment events which occur prior to conducting the final assessment event, are recognised/acknowledged. Recognition must be given to any prevailing regulatory requirements that may apply. The final assessment must ensure that the prerequisite and co-requisite advice is adhered to.

Components of competency standard units

The components of competency standard units are summarised below, in the order in which they appear in each competency standard unit:

Unit Title

The unit title is a succinct statement of the outcome of the competency standard unit. Each unit title is unique, both within and across Training Packages.

Scope/Unit Descriptor

The scope/descriptor broadly communicates the content and purpose of the competency standard unit and the skill area it addresses. Where units have been contextualised from competency standard units in other endorsed Training Package, summary information is provided.

Prerequisite Competencies and Literacy and Numeracy (optional)

If there are any competency standard units that must be completed before or concurrently, these will be listed. In addition, there may be a sub-section on entry advice related to levels of language and numeracy applicable to the unit.

Application of the Unit

This sub-section fleshes out the scope and purpose of the competency standard, and its operation in different contexts, eg showing how it applies in the workplace. It may include a sub-section or second paragraph that describes its relationship with other industry sectors and any licensing application or requirements, such as a licence to practice.

Competency Field (Optional)

The competency field either reflects the way the competency standard units are categorised in the Training Package or denotes the industry sector, specialisation or function. It is an optional component of the competency standard unit.

Sector (optional)

The industry sector is a further categorisation of the competency field and identifies the next classification, for example an elective or supervision field.

Elements of Competency

The elements of competency are the basic building blocks of the competency standard unit. They describe, in terms of outcomes, the significant functions and tasks that make up the competency.

Performance Criteria

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The Performance Criteria specify the required performance in relevant tasks, roles, processes, skills and in the applied knowledge that enables competent performance. They are usually written in passive voice. Critical terms or phrases may be written in bold italics and then defined in the Range Statement, in the order of their appearance in the Performance Criteria.

Required Essential Knowledge and Associated Skills

In the competency standard units, essential knowledge and associated skills (EKAS) may be identified separately or combined. Knowledge identifies what a person needs to know to perform the work in an informed and effective manner. Skills describe the application of knowledge to situations where understanding is converted into a workplace outcome and includes the ability to transfer it to new situations and environments.

In this Training Package essential knowledge and associated skills (EKAS) have been separated from the competency standard units to facilitate user-friendless for interpretation, applicability and future maintenance. Within the EKAS section of each unit clause numbers and titles refer learners to the relevant EKAS details in the separate section in Volume 2. All assessment evidence activities and reporting processes shall include and confirm achievement of the relevant EKAS specification(s).

Range Statement

The Range Statement provides a context for the competency standard unit, describing essential operating conditions for training and assessment, related to the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts. The meanings of key terms used in the Performance Criteria are also explained in the Range Statement.

Evidence Guide

The evidence guide is an integral part of the competency standard unit as it provided the critical assessment information to the RTO and assessors about the critical aspects and how the described competency may be demonstrated. The evidence guide does this by providing a range of evidence for the assessor to make determinations and by providing the assessment context. The evidence guide describes:

- conditions under which competency must be assessed, including variables such as the assessment environment or necessary equipment
- relationships with the assessment of any other competency standard units
- suitable methodologies for conducting assessment, including the potential for workplace simulation
- resource implications, eg access to particular equipment, infrastructure or situations
- how consistency in performance can be assessed over time, various contexts and with a range of evidence
- the required critical aspects and underpinning knowledge and skills
- application against relevant legislation, regulation, industrial instruments, codes of practice, guidelines and advisory standards. This also includes anti-discrimination and equal employment opportunity statutes (encompassing application of access, equity and cultural diversity principles associated with under-represented groups).

Key Competencies

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Key Competencies are integrated in each competency standard unit or across a qualification, depending on industry needs and preferences.

The Key Competencies were first defined in 1992 in the project report, Putting General Education to Work: The Key Competencies Report (Mayer Committee 1992). The skills and knowledge they describe underpin the ability of employees to adapt to technological, organisational, societal and functional change. They are essential for effective workplace participation and involve the sorts of capabilities commonly used by employers as selection criteria.

The Key Competencies apply to work in general, rather than to particular occupations or industries. They focus on the application of knowledge and skills in an integrated way in workplace situations. The seven Key Competencies are:

1. **Collecting, analysing and organising information**

   The capacity to locate, sift and sort information in order to select what is required and to present it in a useful way and evaluate both the information itself and the sources and methods used to collect it.

2. **Communicating ideas and information**

   The capacity to communicate effectively with others using the range of spoken, written, graphic and other non-verbal means of expression.

3. **Planning and organising activities**

   The capacity to plan and organise one's own work activities, including making good use of time and resources, sorting out priorities and monitoring one's performance.

4. **Working with others in teams**

   The capacity to interact effectively with other people both on a one-to-one basis and in groups, including understanding and responding to the needs of a client and working effectively as a member of a team to achieve a shared goal.

5. **Solving problems**

   The capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and the solution are clearly evident and in situations requiring creative thinking and a creative approach to achieve a desired outcome.

6. **Using mathematical ideas and techniques**

   The capacity to use mathematical ideas, such as number and space, and techniques such as estimation and approximation for practical purposes.

7. **Using technology**

   The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.

Performance Levels

There are three levels of performance defined within the Key Competencies. These are stand-alone levels and do not correspond to the AQF qualification levels.

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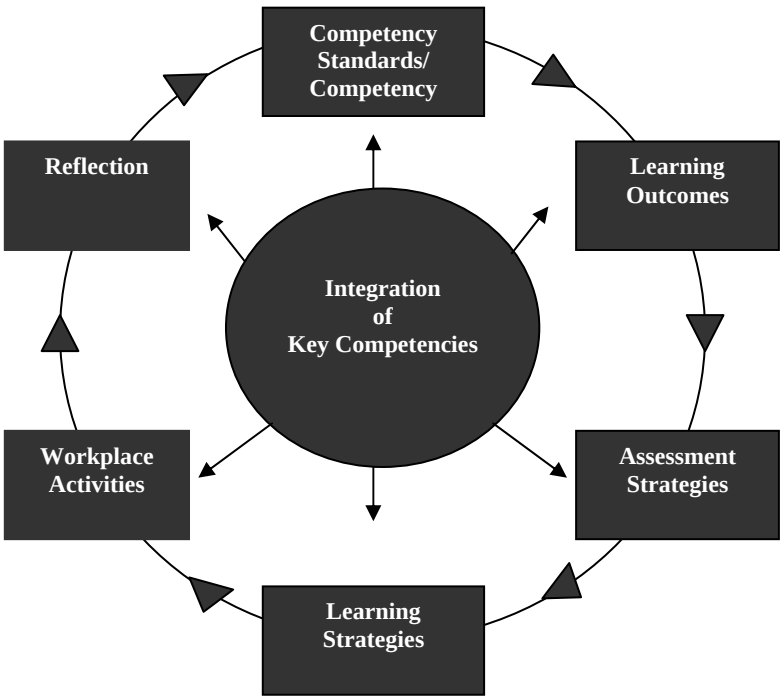
- **Performance Level 1** is concerned with the level of competence needed to **undertake** activities efficiently with sufficient self-management to meet the explicit requirements of the activity, and to make judgements about the quality of outcomes against established criteria.
- **Performance Level 2** describes the competence needed to **manage** activities requiring the selection, application and integration of a number of elements, and to select from established criteria to judge quality of process and outcome.
- **Performance Level 3** describes the competence needed to **evaluate and reshape** processes, to establish and use principles in order to determine appropriate ways of approaching activities, and to establish criteria for judging quality of process and outcome.

Relating performance to the specific industry or workplace context may be more useful than interpreting somewhat abstracted performance levels. To help with assessment Key Competencies are included in the unit in a table with examples of their application,.

Delivery and Assessment of Key Competencies

The Key Competencies are integral to workplace competency and must be explicitly considered in the design, customisation, delivery and assessment of vocational education and training programs. This interrelationship is represented diagrammatically below.



1.2.3 Competency Standards for the Electrotechnology Industry

The first competency standards for the function of Electrotechnology were developed and endorsed in 1992, by the then National Training Board (NTB). These 1992 version competency standard units were updated into Draft Generic Electrotechnology Competency Standards prior to 1998 and provided the basis for developing the Electrotechnology Training Package which was endorsed in 1999 as UTE99.

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Subsequent minor amendments were made to include an array of qualifications, variations to competency standard units and the inclusion of a range of new technologies and sectors.

The revised units in this Training Package cover the broad range of knowledge and skills applied in the Electrotechnology Industry. The development project satisfied the following characristics:

- Development, consultation, and validation included appropriate processes with a wide range of industry employer/employee, practitioners, providers, stakeholders/community, and regulatory and government agency representatives.
- The draft standards were distributed throughout the national, State and Territory ITAB network and to industry stakeholders for feedback. Feedback from other industries was also actively encouraged.

During the development process, the ElectroComms and EnergyUtilities Industry Skills Council (formerly the National Utilities and Electrotechnology ITAB), trading as EE-OZ Training Standards and its nationwide focus groups were appropriately representative of the industry, throughout Australia.

1.2.4 Competency Standard Units for the Electrotechnology Industry

The competency standard units in this Training Package include:

- National Electrotechnology Industry (UEE) units
- Imported units from other endorsed Training Packages that have been valued by the National Electrotechnology Competency Advisory Council (NECAC) for inclusion in Qualifications in this Training Package.

Competency standard units provide specifications of work performance. The Australian Standard Classifications of Occupation (ASCO) defines a number of occupations served by this Training Package. See Preliminary Information in this Volume. Most vocations in this group have an entry level of skill commensurate with an AQF Certificate III or higher qualification. In some instances relevant experience is required in addition to a formal qualification.

A large body of the skills and knowledge detailed in the competencies within this Training Package generally reside within the family of Electrotechnology vocations classified and grouped as occupations under ASCO (Australian Standards Classification of Occupation Code) by the Australian Bureau of Statistics (ABS). Each competency standard unit is linked to one or more AQF qualifications, apart from Possible Skill Clusters competency standard units.

Unit Construction

Within the national training framework, competency standard units are the smallest component of achievement that are nationally recognised, ie the unit as a whole is recognised not individual elements or Performance Criteria within the unit.

The competency standard units in this Training Package have been developed in accordance with the DEST standardised format.

Each unit has a unique title, relates to an industry context, and conforms to national coding requirements. Issues considered in constructing competency standard units in

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this Training Package include breadth, size, transferability and the interrelationships between units. The relationship with any prevailing regulatory requirements and regimes is included in the unit where appropriate.

Competency standard units provide the basis for:

- recognition of skills within and across industries
- work organisation reviews and options
- development of training
- assessment
- certification
- credit transfer and articulation.

Some competency standard units have been constructed to allow for reporting without EnergyUtilities Industry Training Packages require further reporting of relevant transferable information, ie a reporting statement/explanation of intended outcomes. It is information that is important/necessary for maximum recognition and skills transfer. Generally this would be an *endorsement* or subset of the unit and detailed or formal advice about essential knowledge and skills.

An *Endorsement* is a statement recognising the high degree of commonality (in process or function) in Elements and Performance Criteria when applied across the industry, irrespective of the required technical knowledge. *Endorsements* are a way of including information in the Evidence Guide of the unit that relates to a particular application and/or vocational outcome. This type of unit might be seen as several units in one, ie a unit with five *Endorsements* has five specific outcomes. Additional information is contained within the respective units.

In units that include *endorsements,* all aspects of a selected *endorsement* must be completed to attain formal recognition of a specific outcome.

In some instances the *endorsement* may be affected by, and interrelated with, the selection of same for the requisite qualifications which are detailed in, and to be completed in accordance with Volume 1 Part 1 – Qualifications of this Training Package. In particular refer to section re Qualifications Structure. In such cases where units contain *endorsements* they should not be interpreted independently from the qualification selected, as detailed in Volume 1 Part 1 – Qualifications Framework, which requires the nomination of an *endorsement*.

Skills Enabling Employment

A new feature included in the competency standard units of this Training Package is the inclusion of skills that enable employment, ie that enable employees to develop and use 'real life' skills and experiences in work, eg for self-learning, for reflecting on performance, for interpreting the workplace, in planning and organising work, and in responding to new situations that are non-routine.

Skills enabling employment apply to work in general as enabling skills, rather than to particular occupations or industries. They focus on the enabling qualities of knowledge and skills as they are applied in an integrated way in workplace situations. There are six conditions where enabling knowledge and skills can be demonstrated:

1. Developing and using skills within a real workplace
2. Learning to learn in the workplace

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3. Reflecting on the outcome and process of work task
4. Interacting and understanding of the context of the work task
5. Planning and organising the meaningful work task
6. Performing the work task in non-routine or contingent situations.

Contextualisation

In the competency standard units 'notes' have been placed against respective aspects that include Scope, Performance Criteria, Range Statement and Essential Knowledge and Associated Skills and other related sections. The insertion of these 'notes' is primarily to provide users and support material developers with examples of the form and type related to technical content principles, technology, equipment, or processes that may be used to cover the outcomes. The examples should be treated as information that adds clarity for the purposes of assisting in guidance of the depth and breadth that is to be covered.

As the type, form, process or technique of technology and equipment may change it is expected and encumbent on RTOs to continue to be current in the content of their delivery arrangements.

It is therefore appropriate for RTOs to use the notes in relation to technology and equipment references as advisory information. In these instances RTOs should aim to accommodate the adoption of improved and new technologies in the Scope/Range and essential knowledge and associated skills of the competency standard units by varying the context examples given in the referenced 'Notes' to the Performance criteria, Range statement and Essential Knowledge and Associated Skills. However, the contextualisation must not be such that the outcome of the competency standard units is altered in any way.

Where contextualisation of the notes varies the outcome of the competency standard units and its related content, RTOs should consult with EE-Oz Training Standards to explore options for incorporating and/or covering the new arrangements, so that currency of the Training package is maintained.

It should be noted that any need to alter the competency standard units from its intended outcome requires a new or varied competency standard unit. Such changes are to be undertaken through the continuous improvement processes required of Training Packages, which in relation to this Training Package is managed by EE-Oz Training Standards.

Also refer to Volume 1 Part 1 – Qualifications Framework, of this Electrotechnology Training Package that describes vocational standards for the Industry.

Prerequisites

It is important to note that in relation to training delivery of prerequisites competency standard units, training and formative staged assessments may be delivered for all, or part of the sequence of competency standard units concurrently and at a different stage to the final assessment of each unit. However, the final assessment event and judgement for attributing competence for each unit is to follow the prerequisite sequence.

Assessment Guidelines

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The Electrotechnology Industry has developed guidelines for the assessment of these competency standards. Assessment guidelines are included at Volume 1 Part 3 of this Training Package. Within a competency standard unit there may be advice as to additional reporting that is preferred by Industry. Where appropriate, RTOs should recognise and support this preference.

Qualifications

The Electrotechnology Industry has clearly identified qualifications which are linked to and use the competency standards. These are listed and detailed in Volume 1 Part 1 – Qualifications Framework of this Training Package. Included are details of the content and composition of the qualifications, the Industry Qualifications Framework, completion requirements, the rules for structuring, flexibility arrangements and the qualifications structure for each qualification. Further, there is a full description provided for each qualification, which explains its application and gives added meaning to the group of units making up the respective qualification.

Exporting CSUs from this Training Package

No competency standard unit from this Training Package is to be used in isolation or exported without including all relevant interrelated components such as definitions, glossary, essential knowledge and skills, matters related to language, literacy and numeracy, access, equity, cultural diversity or any regulatory arrangements that apply.

1.2.5 Maintenance of Competency Standards

The Electrotechnology Industry competency standards were developed and are owned by the industry. However, it is acknowledged that copyright ownership with respect to this material rests with the Commonwealth.

The competency standards must be maintained so that they reflect the ongoing needs of the Electrotechnology Industry and respond in a timely manner to changed technologies and circumstances.

The parties (identified in the Preliminary Information of this Training Package) who constitute the Electrotechnology Industry of the ElectroComms and EnergyUtilities Industry Skills Council share responsibility for the maintenance of the competency standards.

- The maintenance of competency standards will be coordinated and managed by ElectroComms and EnergyUtilities Industry Skills Council Ltd trading as EE-Oz Training Standards or its successor.
- Suggestions and proposals for changes from all parties are welcomed. These should be documented and submitted to EE-Oz Training Standards in accordance with its policies and procedures.

1.2.6 Contextualisation of Competency Standard Units by RTOs

RTOs may contextualise competency standard units to reflect local outcomes required, provided that no requirements and/or completion rules of the Training Package for industry are infringed. This also includes any prevailing regulatory requirements that may apply to the competency standard units. Contextualisation, provided it does not dilute in any way the competency standard units, could involve additions or

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amendments to suit particular delivery methods, learner profiles, specific enterprise equipment requirements, or to otherwise meet local needs. The integrity of the overall intended outcome of the competency standard units must be maintained and not reduced in any way.

In contextualising competency standard units RTOs:

- must not contravene, diminish or detract from any regulatory/licensing arrangement that may apply to the unit, or its related delivery arrangements
- must not remove or add to the number and content of Elements and Performance Criteria
- may add specific industry terminology to Performance Criteria where this does not distort or narrow the competency outcomes
- may make amendments and additions to the Range Statement as long as such changes do not diminish the breadth of application of the competency or reduce its portability
- may add detail to the Evidence Guide in areas such as the critical aspects of evidence or resources and infrastructure required where these expand the breadth of the competency but do not limit its use.

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1.2.7 Index of Competency Standard Units

The units in this Training Package have been placed in Discipline groups that would typically relate to a particular or special area of industry need and for ease in recognition of related unit groupings.

Table 1 – Index of Units and Scopes/Descriptors

Discipline A – Assembly

Unit Code	Unit Title	Scope/Descriptor
UEENEEA001A	Assemble electronic apparatus	This unit covers fitting and interconnecting of electronic sub assemblies. It encompasses the safe use of hand tools power tools, identifying components, high reliability soldering, following set procedures and work instructions and keeping work records
UEENEEA002A	Select electronic components	This unit covers the identifying and selecting of electronic components for assembly from job specifications. It encompasses working safely, interpreting job specifications, identifying components by colour code and markings and following quality procedures and work instructions
UEENEEA003A	Set up and check electronic component placement machines	This unit covers the setting up of electronic circuit board assembly machines. It encompasses working safely, interpreting job specifications, identifying components by colour code and markings, following machine set-up routines and following quality procedures and work instructions
UEENEEA004A	Rework electronic sub assemblies	This unit covers correcting and/or modifying electronic sub assemblies. It encompasses working safely, high reliability de-soldering/soldering, checking components against job specifications, testing and following quality procedures.
UEENEEA005A	Conduct functional and quality tests on assembled electronic apparatus	This unit covers setting up testing equipment, testing functionality and inspecting quality of electronic apparatus. It encompasses working safely with electricity, testing device set-up, following testing and inspection procedures, interpreting and reporting testing and inspection results and making recommendations for dealing with defects.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEA006A	Apply lead-free soldering techniques	This unit covers connecting/de-connecting electronic components using lead-free soldering. It encompasses working safely, high reliability soldering/de-soldering, checking components against job specifications, testing and following quality procedures.
UEENEEA007A to UEENEEA009A	RESERVED	
UEENEEA010A	Assemble, mount and connect switchgear and controlgear	This unit covers the assembling and mounting of switchgear and controlgear including the interconnections within a switchboard enclosure intended to operate at voltages up to 1000 V a.c. or 1500 V d.c. It encompasses working safely, following standards, specifications and component manufacturers requirements, matching equipment with that specified, terminating cables and connecting wiring and completing necessary documentation.
UEENEEA011A	RESERVED	
UEENEEA012A	Make up and assemble bus bars	This unit covers fabricating and assembling copper and aluminium bus bar for interconnections in switchboards and for specific plant that has high current demand. It encompasses working safely and to standards and specifications, measuring, cutting, shaping and fixing bus bar and completing necessary documentation
UEENEEA013A	Assemble and wire control panels	This unit covers mounting control devices, wiring support in control panel enclosures and installing the interconnecting wiring. It encompasses working safely, following layout and circuit diagrams, mounting equipment, installing and terminating wiring, functional testing and completing necessary documentation.

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Discipline B – Broadcast

Unit Code	Unit Title	Scope/Descriptor
UEENEEB001A	Operate and maintain an amateur radio communication station	This unit deals with operation and maintenance of an amateur radio communication station suitable to HF, VHF and SHF communication using multiple modes of operation. It encompasses correct operating procedures, safe working practices, following written and oral instruction and procedures, basic testing techniques, dismantling and assembling apparatus, disconnecting and reconnecting components, and operating to the Standard Licence Level as prescribed by the Australian Communication Media Authority.

Discipline C – Commercial

Unit Code	Unit Title	Scope/Descriptor
UEENEEC001A	Maintain documentation	This unit covers the maintenance of the variety of documentation required to record work activities, purchases and expenses and compliance obligations. It encompasses documentation typically required in an electrotechnology enterprise, work instructions and procedures and time management
UEENEEC002A	Source and purchase material/parts for installation or service jobs	This unit covers sourcing and purchasing / ordering materials/parts for installation or service jobs. It encompasses following job specification, using manufacture's catalogues, making telephone, Internet or email enquiries, selecting compliance materials and completing the necessary purchasing documentation. Note: *In the unit the value of materials for installation jobs is limited to $20k.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEEC003A	Provide quotations for installation or service jobs	This unit covers providing quotations for installation and service work not exceeding $20k. It encompasses following job specification, using manufacturer catalogues, making telephone, Internet or email enquiries, selecting compliance materials, pricing materials and labour costs, completing the necessary quotation documentation and applying the necessary customer relations protocols
UEENEEC004A	Prepare specifications for the supply of materials and equipment for electrotechnology projects	This unit covers writing technical specifications for the supply of materials and equipment for electrotechnology projects. It encompasses establishing the performance requirements, comparing requirements with available materials and equipment, specifying material and equipment performance requirements and documenting the specification
UEENEEC005A	Estimate electrotechnology projects	This unit covers estimate material and labour costs for competitive quotation/tenders for work exceeding $20k. It encompasses reading and understanding job specifications, material take-offs, determining labour and site requirements, costing and documenting
UEENEEC006A	Prepare tender submissions for electrotechnology projects	This unit covers the preparation of tender documents. It encompasses reading and understanding tender requirements and project specifications, verifying estimates and capacity to meet timelines, complying with legal requirements and documenting submissions
UEENEEC007A	Manage contract variations	This unit covers estimating and negotiating variations to contracted work. It encompasses understanding the specification on which the contracted price is based, identifying contract variations, negotiating and using methods for submitting variations, documenting and applying customer relations protocols

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Unit Code	Unit Title	Scope/Descriptor
UEENEEC008A	Receive and store materials and equipment for electrotechnology work	This unit covers the receiving and storing of materials and equipment for a construction site or workshop store. It encompasses receiving materials and equipment, checking consignment notes, storing materials and equipment and completing the necessary documentation
UEENEEC009A	Provide quotations for inspection and compliance audit services	This unit covers providing quotations for compliance inspections and technical safety audits. It encompasses reading and understanding job specification, pricing labour and site costs, completing the necessary quotation documentation and applying the necessary customer relations protocols
UEENEEC010A	Deliver a service to customers	This unit covers the interacting with customers to identify and meet their service needs. It encompasses following community and enterprise policies and standards, identifying customer needs identifying and resolving problems/issues and maintaining product/service quality.
UEENEEC011A	RESERVED	
UEENEEC012A	Direct technical and non-technical enquiries to appropriate personnel	This unit covers clarifying the nature of technical and non-technical enquiries of customers and co workers and directing such enquiries to appropriate personnel. It encompasses working safely, applying appropriate knowledge to questioning enquirers, clarifying the point of an enquiry, directing enquiries appropriately and documenting actions.
UEENEEC013A	Participate in business equipment work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEC014A	Participate in computer equipment work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC015A	Participate in custom electronic installations work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC016A	Participate in voice and data communications work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC017A	Participate in appliance servicing work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEC018A	Participate in electrical machine repair work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC019A	Participate in switchgear and controlgear work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC020A	Participate in electrical work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC021A	Participate in electronics and communications work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEC022A	Participate in fire protection control work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities..
UEENEEC023A	Participate in gaming electronic work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC024A	Participate in instrumentation and control work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC025A	Participate in refrigeration and air conditioning work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEC026A	Participate in security equipment work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC027A	Participate in rail communications and networks work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC028A	Participate in hazardous areas work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEC029A	Participate in explosion-protected equipment overhaul work and competency development activities	This unit covers the application of industry/enterprise policies in actively participating in work activities and in one's own competency development. It complies with established industry/enterprise procedures regarding how work is conducted, understanding responsibilities and obligations under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.

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Discipline D – Computerised Systems

Unit Code	Unit Title	Scope/Descriptor
UEENEED001A	Use basic computer applications relevant to a workplace	This unit covers the basic use of personal computers application relevant to a work function. It encompasses switching the computer on, applying user preferences, selecting basic applications, entering and retrieving information and printing files.
UEENEED002	Assemble, set up and test personal computers	This unit covers assembly, setting up and testing personal computers as directed in computer service manuals. It encompasses safe working practices, checking computer components, assembling components to form a basic personal computer, installing and testing basic operating system, drivers and application software, following written and oral instruction and applying customer relations procedures. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED003A	Evaluate and modify programs written in object oriented code	This unit covers evaluating and modifying programs based on object-oriented code. It encompasses safe working practices, following written and oral instruction and procedures, applying knowledge of object-oriented code scripting and testing and documenting outcomes. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED004A	Use engineering applications software	This unit covers the use of computers application relevant to engineering support work functions. It encompasses installing software, applying user preferences, using application menus and tools, entering and retrieve information, working with groups and transferring and printing files. **Note**: *Examples of engineering application software are Visio, Electronic Work Bench, LabView.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEED005A	Enter and verify operating instructions in microprocessor equipped devices	This unit covers entering instructions in microprocessor-equipped devices (embedded system) with simple built-in programming function and verifying that the device operates as intended. It encompasses safe working practices, checking device installation, following written and oral instruction and procedures and completing necessary documentation. **Note**: *Examples of devices are simple programmable relays, timers, temperature controllers, switches and basic detection devices for security and fire the like.*
UEENEED006A	RESERVED	
UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set	This unit covers development, installation and testing of programs for programmable logic controllers (PLC) for a system requiring extended control functions. It encompasses working safely, applying knowledge of control systems, control system development methods, ladder logic control functions, using ladder instruction set, following written instructions and documenting program development and testing activities.
UEENEED008A	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems	This unit covers development, installation and testing of programs in for supervisory control and data acquisition. It encompasses working safely, process analysis, developing database of process conditions, developing Human-Machine Interface (HMI), using dedicated SCADA software package and documenting programming activities.
UEENEED009A	Develop, enter and verify programs for industrial control systems using high level instructions	This unit covers development, installation and testing of programs for an industrial system requiring advance control functions. It encompasses working safely, using structure logic, acceptable design techniques, applying knowledge of high level instructions, and documenting development and programming activities

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Unit Code	Unit Title	Scope/Descriptor
UEENEED010A	Set up and create content for a web server	This unit covers installation, set up, implementation and provision of ongoing support of web services. It encompasses working safely, installing and administering server software and databases, server side scripting, configuring access and security and documenting work activities. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED011A	Create object oriented code	This unit covers developing, implementing and testing object oriented programming solutions using object orientated programming language. It encompasses following development brief, using appropriate development software, writing code that features classes, inheritance, arrays and packages, creating applets and documenting development activities. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED012A	Support computers hardware and software	This unit covers upgrading and maintaining computers, computer devices and peripherals and installing, maintaining and configuring software. It encompasses safe working practices, installing and testing the upgrading components, locating faults in hardware components, replacing faulty components, installing and testing the operating system and application software, testing functionality, rectifying malfunctions, following written and oral instruction and procedures and applying appropriate customer relations. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED013A	Install and administer Unix based computers	This unit covers the installation and administration of UNIX based and networked computers. It encompasses safe working practices, performing basic UNIX, Linux or Mac OSX operating system installation, administration functions of logging in and out, setting up GUI applications, manipulating text files, creating and searching files and directories, changing permissions, using text editors, identifying and modifying initialisation files, streamlining command, execution using shell features, using basic network commands and documenting all administration activities. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEED014A	Design and manage enterprise networks	This unit covers designing, managing, monitoring and diagnose enterprise servers. It encompasses safe working practices, designing and managing Domain Name Server (DNS), Email servers, Dynamic Host Configuration Protocol (DHCP), Remote access servers, Network Address Translation (NAT), Directory services, Authentication Servers and documenting all designing and managing activities. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED015A	Administer user networks	This unit covers the administration of network servers. It encompasses safe working practices, establishing and maintaining user and group permissions, network security and shared resource management, monitoring and optimising network systems performance and reliability, maintaining currency of the network and documenting all administration activities. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED016A	Develop network services	This unit covers develop services for network clients for emails, Internet access, shared resources. It encompasses safe working practices, installing and configuring Domain Name Server (DNS), email servers, Dynamic Host Configuration Protocol (DHCP), remote access servers, Network Address Translation (NAT), directory services, Authentication Servers and documenting development activities. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED017A	Install and configure Internetworking systems	This unit covers the interconnection of networks using Open Systems Interconnection model (OSI) layer 2 and 3 devices. It encompasses safe working practice, basic installation and configuration of switches and routers and documenting installation and configuration activities. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEED018A	Design and implement Internetworking systems	This unit covers the design, implementation and performance monitoring of Internetworking systems. It encompasses safe working practice, evaluating customer requirements, applying sound design principles, using Wide Area Network (WAN) technologies, complying with regulation and standards, and documentation of design and performance monitoring. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED019A	Design and implement Internetworking systems – advanced routing	This unit covers the design, implementation and performance monitoring of Internetworking systems. It encompasses safe working practice, evaluating customer requirements, applying sound design principles, complying with regulation and standards, incorporation and advance configuration of remote access and documentation of design and performance monitoring **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED020A	Design and implement Internetworking systems – remote access	This unit covers the design, implementation and performance monitoring of Internetworking systems. It encompasses safe working practice, evaluating customer requirements, applying sound design principles, complying with regulation and standards, incorporation and advance configuration of remote access and documentation of design and performance monitoring. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED021A	Design and implement Internetworking systems – multi-layer switching	This unit covers the design, implementation and performance monitoring of Internetworking systems. It encompasses safe working practice, evaluating customer requirements, applying sound design principles, complying with regulation and standards, incorporation and advance multi-layer switching technologies and documentation of design and performance monitoring. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEED022A	Design and implement Internetworking systems – security	This unit covers the design, implementation and performance monitoring of Internetworking systems. It encompasses safe working practice, evaluating customer requirements, applying sound design principles, complying with regulation and standards, incorporation of advance security technologies and documentation of design and performance monitoring. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED023A	Design and implement Internetworking systems – wireless LANs/WANs	This unit covers the design, implementation and performance monitoring of Internetworking systems. It encompasses safe working practice, evaluating customer requirements, applying sound design principles, complying with regulation and standards, incorporation and advance wireless LANs technologies and documentation of design and performance monitoring. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED024A	Integrate multiple computer operating systems on a client server network	This unit covers interconnecting computers to form a local area network (LAN). It encompasses applying different computer and network operating system on a single LAN, using network standards and protocols, selecting network topology and physical media, disaster planning recovery, performance management and documentation of work activities. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED025A	Design and configure Human-Machine Interface networks	This unit covers monitoring and maintaining the operation of distributive and central control system networks. It encompasses safe working practices, installing and configuring controllers and devices, monitoring system operations, diagnosing malfunctions and faults and documenting development activities.
UEENEED026A	Design a computer based control system	This unit covers the design of computer application for control processes. It encompasses apply knowledge of control devices, control systems, programmable logic controllers, supervisory control and data acquisition systems and control programming methods, developing alternative design schemes based on design brief, customer relations and documenting designs

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Unit Code	Unit Title	Scope/Descriptor
UEENEED027A	Develop structured programs for control sub systems to access external devices	This unit covers programming of micro-processor/micro-controller devices to access external devices. It encompasses working safely, applying knowledge of control applications, and analogue and digital input/output signals, programming fundamentals, writing and testing program and documenting programming activities
UEENEED028A	Develop and test basic specification for micro-controller equipped devices	This unit covers structured programming instructions for micro devices at a fundamental level. It encompasses working safely, applying knowledge device architecture and programming fundamentals, writing and testing specified instructions and documenting development activities. **Note** *In this unit the term 'micro' refers to micro-controllers however competency in the unit can be achieved using microprocessors.*
UEENEED029A	Develop basic web pages for engineering applications	This unit covers the development of web pages for engineering applications. It encompasses working safely, developing web pages using authoring tools, client-side scripting, fundamental server-side scripting and documenting development activities. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED030A	Select, install, configure and test multimedia devices	This unit covers assembly, setting up and testing multimedia computer systems as directed in computer service manuals and device/driver documentation. It encompasses safe working practices, and selecting, installing, configuring and testing multimedia computer system components, applications, and driver software, following written and oral instruction and applying customer relations' procedures. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED031A	Develop and validate basic integrated systems	This unit covers planning installations, developing instructions and validating integrated systems with up to three independent subsystems. It encompasses working safely, understanding operating parameters and capabilities, following instructions and documenting

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Unit Code	Unit Title	Scope/Descriptor
UEENEED032A	Design integrated systems	This unit covers designing systems for the control and management of services such as lighting, air conditioning, water use entertainment facilities, communications for buildings and premises. It encompasses developing control scenarios based on a design brief, negotiating with architect/designer, builder and client, applying knowledge of integrated systems and protocols, developing design drawings and obtaining approval for final design. **Note** *This Unit is limited to systems with up to three inter working subsystems*
UEENEED033A	Design complex integrated systems	This unit covers designing large and networked systems for the control services and energy management in buildings and premises. It encompasses developing control scenarios based on a design specifications and/or brief, negotiating with architect/designer, builder and client, applying knowledge of integrated systems, networks and protocols, developing design drawings and obtaining approval for final design.
UEENEED034A	Configure and maintain industrial control system networks	This unit covers installing, configuring and maintaining communication service on a control network. It encompasses safe working practices; applying knowledge of industrial control network topology and protocols, configuring data links, bus monitoring and system management and access, network testing and documenting system settings. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED035A to UEENEED042A	RESERVED	
UEENEED043A	Install and configure a computer operating system and software	This unit covers installing and configuring an operating system and software on a personal computer. It encompasses safe working practices, installing and testing the operating system and application software, testing functionality, rectifying operating anomalies, following written and oral instruction and procedures and applying appropriate customer relations. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEED044A to UEENEED045A	RESERVED	
UEENEED046A	Set up and configure basic local area network	This unit covers setting up, configuring and maintaining operation of a basic local area network (LAN) of up to 20 connected devices. It encompasses safe working practices, installing network hardware, installing and configuring network software, establish user accounts, configure shared Internet connection and documenting set up parameters and LAN topology. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED047A	Manage computer projects	This unit covers the management of computer projects involving design, modifications, installation, and/or maintenance of systems and equipment. It encompasses management of safety, budget, variation, personnel, resources, and critical path timelines all necessary progress and all completion documentation.
UEENEED048A	Plan computer systems projects	This unit covers development and documentation of computer systems project proposals, milestones and completions. The unit encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines
UEENEED049A	RESERVED	
UEENEED050A	Develop control programs for microcomputer equipped devices	This unit covers development of hardware and programs to control external devices using microcomputers as apply to engineering product development work. It encompasses working safely, following design brief, applying knowledge of microcomputer architecture, constructing prototype devices, programming using assembler or 'C' programming language, testing device operation and documenting development work. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEED051A	Provide programming solution for engineering problems	This unit covers developing, implementing and testing programming solutions, using a structure programming language. It encompasses following design brief, using appropriate development software, writing code that features classes, inheritance, polymorphism, arrays and packages, creating applications (applets) and documenting development activities. **Note 1***: Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions*. **Note 2**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED052A	Design embedded controller systems	This unit covers designing systems incorporating micro-controllers or embedded signal processors (DSPs). It encompasses working safely, following design briefs, applying knowledge of embedded system devices, interpreting device specifications, constructing prototypes, using appropriate development software, applying programming techniques, testing developed system prototype operation and documenting design and development work. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*
UEENEED053A	Set up and test biometric devices	This unit covers setting up and testing various biometric devices as implemented in the field of biometric measurements. This is achieved through the installing, setting up, configuring and testing biometric devices in accordance with requirements. It encompasses safe working practices, following written and oral instructions and procedures, applying knowledge of biometric devices then installing and testing their performance while documenting outcomes.
UEENEED054A	Analyse and implement biometric techniques and applications	This unit covers analysing and implementing the various established biometric techniques and applications as implemented in the field of biometric measurements. This is achieved through evaluation of the major biometric system from enrolment phase, interaction with the operator and subject, to decision making. It encompasses safe working practices, following written and oral instructions and procedures, applying knowledge of biometric systems then implementing, testing and evaluating their performance while documenting outcomes.

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Unit Code	Unit Title	Scope/Descriptor
UEENEED055A	Develop and validate biometric systems installation instructions	This unit covers the development of biometric system installation, instructions and validating requirements of biometric systems. It encompasses working safely, understanding operating parameters and capabilities, following instructions and while documenting outcomes.

Discipline E – Cross-Discipline

Unit Code	Unit Title	Scope/Descriptor
UEENEEE001A	Apply OHS practices in the work place	This unit specifies the mandatory requirements of occupational health and safety and how they apply to the various electrotechnology work functions. It encompasses responsibilities for health and safety, risk management processes at all operative levels and adherence to safety practices as part of the normal way of doing work. **Note***: Components of this unit are included in the critical aspects of evidence of each applicable unit to ensure that OHS practices are demonstrated as they apply to specific work functions and situation*
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components	This unit covers basic fitting and fabrication techniques as they apply in the various electrotechnology work functions. It encompasses the safe use of hand, fixed and portable power tools; cutting, shaping joining and fixing using metallic and non-metallic materials; dismantling and assembling equipment; basic mechanical measurement and marking-out and reading diagrams.
UEENEEE003A	Solve problems in extra-low voltage single path circuits	This unit covers providing known solutions to predictable problems in single path circuits operated at extra-low voltage as they apply to various electrotechnology work functions. It encompasses working safely, problem solving procedures, including the use of basic voltage, current and resistance measuring devices, providing known solutions to predictable circuit problems.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE004A	Solve problems in multiple path d.c. circuits	This unit covers determining correct operation of single source d.c. parallel and series-parallel circuits and providing solutions as they apply to various electrotechnology work functions. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in multiple path circuit.
UEENEEE005A	Fix and secure equipment	This unit covers fixing, securing and mounting techniques as apply in the various electrotechnology work functions. It encompasses the safe use of hand and portable power tools, safe lifting techniques, safe use of ladders and elevated platforms and the selection and safe application of fixing devices and supporting accessories/equipment.
UEENEEE006A	Apply methods to maintain currency of industry developments	This unit covers methods for keeping up-to-date with developments in electrotechnology-adopted technologies, standards and safety that affect the currency of competencies held. It encompasses accessing relevant information and skills and using formal and informal ways of acquiring this information and skills.
UEENEEE007A	Use drawings, diagrams, schedules and manuals	This unit covers the use of drawings, diagrams, equipment and cable schedules and manuals as they apply to the various electrotechnology work functions. It encompasses the rudiments for communicating with schematic, wiring and mechanical diagrams and equipment and cable/connection schedules, manuals, site and architectural drawings and plans showing the location of services, apparatus, plant and machinery.
UEENEEE008A	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	This unit covers the laying of wiring/cabling, connection of accessories and continuity and insulation resistance testing of circuits intended to operate at extra-low voltage. Typically this includes circuits and accessories for ELV powered devices, security, controls, integrated systems and audio/video systems. It encompasses the principles of single source, single load power circuits, control and communications circuits, safe working practices and following work processes that satisfy electrical principles for safety and functionality.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE009A	Comply with scheduled and preventative maintenance program processes	This unit covers the quality assurance and risk management compliance processes for maintaining the electrotechnology aspects of plant and equipment. It encompasses working safely and to technical, quality and risk management standards, work specifications and maintenance schedules, sample inspections, evaluating components and completing the necessary maintenance documentation.
UEENEEE010A	Develop and implement maintenance programs	This unit covers the development of maintenance programs to ensure safe and continued operation of plant and equipment. It encompasses evaluating risks associated with equipment failure, development of fail safe strategies incorporating maintenance frequency, repair/overhaul/replacement policies, and development of record and reporting system.
UEENEEE011A	Manage risk in electrotechnology activities	This unit covers managing risk related to OHS, environment, resources and financial viability. It encompasses identifying risk events, the likelihood and consequences of such events, evaluating risk, risk management planning and mitigation of risk.
UEENEEE012A	Manage electrotechnology projects	This unit covers the management of projects involving design, modifications, installation and or maintenance of systems and equipment. It encompasses management of safety, budget, variations, personnel, resources and critical path timelines and necessary progress and completion documentation.
UEENEEE013A	Plan electrotechnology projects	This unit covers development and documentation of project proposals, milestones and completions. It encompasses establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.
UEENEEE014A	Supervise and coordinate work activities	This unit covers supervising and coordinating work activities in an electrotechnology discipline. It encompasses working safety, implementing safety procedures and processes, sequencing work activities, providing guidance and work instructions to others, ensuring job requirements are met and maintain necessary work documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE015A	Develop design briefs for electrotechnology projects	This unit covers developing requirement to be incorporated into the design of electrotechnology projects. It encompasses determining the safety requirements to be met, establishing client's expectations, ensuring cost effective solutions are pursued and documenting design requirements.
UEENEEE016A	Write specifications for electrotechnology projects	This unit covers developing requirement to be incorporated into the writing of specifications for electrotechnology projects. It encompasses determining the safety requirements to be met, establishing client's expectations, ensuring cost effective solutions are pursued and documenting design and technical requirements.
UEENEEE017A	Implement and monitor OHS policies and procedures	This unit covers the mandatory requirements of persons in a supervisory role to implement and monitor an organisation's occupational health and safety policies, procedures and programs. It encompasses understanding an organisation's OHS obligations, providing safety information to staff, implementing and monitoring participative arrangements, safety procedures and training and maintaining safety records.
UEENEEE018A	Establish, maintain and evaluate OHS systems	This unit covers the mandatory responsibility of an organisation's executive officers to establish, maintain and evaluate an OHS system.. It encompasses understanding an organisation's OHS obligations, establishing and maintaining participative arrangements, procedures for hazard identification, risk assessment and control measures, procedures for dealing with hazardous incidents, safety training, safety records, and evaluating the safety system.
UEENEEE019A	Solve problems in multiple path a.c. circuits	This unit covers determining correct operation of single source a.c. parallel and series-parallel circuits and providing solutions as they apply to various electrotechnology work functions. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in multiple path circuits.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus	This unit covers instructing customers/users in the use of electrotechnology apparatus. It encompasses appropriate customer relations, the use of apparatus manufacturer's instruction material, basic instruction methods and evaluation and completing documentation.
UEENEEE021A	Plan an integrated cabling system	This unit covers the planning of cable routes for power, lighting, communications, entertainment, distributed video and audio and energy management and control. This unit encompasses determining immediate and future cabling needs of an installation and their origins and termination points, planning cable routes, specifying cable types, sizes, fixing/support methods and cable identification systems and documenting cabling plans based on calculated and/or deemed-to-comply solutions as well as the planning of the wiring hub if required.
UEENEEE022A	Carry out preparatory electrotechnology work activities	This unit covers the carrying out of preparatory work related to any electrotechnology discipline. It encompasses working safely, following basic instructions under direct supervision. It will include electrotechnology support activities including the use of basic hand tools, the safe use of ladders and elevated work platforms and the fixing and securing of equipment under direction following routine work practices.
UEENEEE023A	Solve basic problems in electronic and digital equipment	This unit covers determining correct operation of basic electronic and digital equipment and providing solutions as they apply to various electronic and computer work functions. It encompasses working safely, problem solving procedures, including the use of basic measuring devices, providing solutions derived from equipment behaviour and measurements to predicable problems.
UEENEEE024A	Compile and produce an electrotechnology report	This unit covers complying and producing an electrotechnology report. It encompasses confirming that the safety requirements are met and all regulatory responsibilities are adhered to. The person competent in this unit must demonstrate an ability to identify information sources and collect and analyse and format information applicable to the electrotechnology industry and produce a report as required.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE025A	Solve problems in complex multiple path circuits	This unit covers determining correct operation of complex series-parallel circuits and providing solutions as they apply to various electrotechnology work functions. It encompasses working safely, problem solving procedures, including using electrical measuring devices, applying appropriate circuit theorems and providing solutions derived from measurements and calculations and justification for such solutions.
UEENEEE026A	Provide computational solutions to basic engineering problems	This unit covers the application of computational processes to solving engineering problems. It encompasses working safely, applying problem solving techniques, using a range of mathematical processes, providing solutions to electrical/electronics engineering problems and justifying such solutions. **Note**: *Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions.*
UEENEEE027A	Use advanced computational processes to provide solutions to engineering problems	This unit covers the application of advanced computational processes to solve engineering problems. It encompasses working safely, applying problem solving techniques, using a range of advanced mathematical processes, providing solutions to electrical/electronics engineering problems and justifying such solutions. **Note**: *Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions.*
UEENEEE028A	Develop engineering solutions to photonic problems	This unit covers developing engineering solutions to resolve problems with photonic systems. It encompasses working safely, apply extensive knowledge of photonic technologies and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE029A	Solve electrotechnical problems	This unit covers the application of calculations required to solve electrotechnical problems. It encompasses working safely, applying problem solving techniques, using a range of mathematical processes and techniques to providing solutions to electrotechnical problems, and justifying such solutions. **Note**: *Typical electrotechnical problems are those encountered in meeting requirements in meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions*
UEENEEE030A	Provide solutions to and report on routine electrotechnology problems	This unit covers the application of fundamental numerical calculations required to solve routine electrotechnology problems and reporting the outcomes to requirements. It encompasses working safely, applying routine problem solving techniques, using a range of fundamental mathematical processes and techniques to identifying solutions to electrotechnology problems, and reporting the solutions. **Note**: *Typical electrotechnical problems are those encountered in meeting requirements in meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions. Typical reports are those based on routine structures and formats, and require the application of routine communication fundamentals.*
UEENEEE031A	RESERVED	
UEENEEE032A	Document occupational hazards and risks in computer systems	This unit covers: i) occupational work hazard identification ii) identifying health and safety risks to workers iii) classifying risks iv) documenting control measures intended to eliminate or reduce the risk that could potentially arise during the conduct of work activities, and v) consultation processes with those involved with computer systems work. The unit deals primarily with the process involved in completing documentation and/or making appropriate modifications to pre-prepared documents.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE033A	Document occupational hazards and risks in electrical work	This unit covers i) occupational work hazard identification, ii) identifying health and safety risks to workers, iii) classification of risks, iv) documenting control measures intended to eliminate or reduce the risk that could potentially arise during the conduct of work activities and v) consultation processes with those involved with electrical work. This unit deals primarily with the process involved in completing documentation and/or making appropriate modifications to pre-prepared documents.
UEENEEE034A	Document occupational hazards and risks in electronics	This unit deals primarily with the process involved in completing documentation and/or making appropriate modifications to pre-prepared documents. It covers: i) occupational work hazard identification ii) identifying health and safety risks to workers iii) classifying risks iv) documenting control measures intended to eliminate or reduce the risk that could potentially arise during the conduct of work activities, and v) consultation processes with those involved with computer systems work.
UEENEEE035A	Document occupational hazards and risks in instrumentation	This unit deals primarily with the process involved in completing documentation and/or making appropriate modifications to pre-prepared documents. It covers i) occupational work hazard identification ii) identifying health and safety risks to workers iii) classification of risks iv) documenting control measures intended to eliminate or reduce the risk that could potentially arise during the conduct of work activities and v) consultation processes with those involved with computer systems work.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE036A	Document occupational hazards and risks in refrigeration and air-conditioning	This unit deals primarily with the process involved in completing documentation and/or making appropriate modifications to pre-prepared documents. It covers i) occupational work hazard identification ii) identifying health and safety risks to workers iii) classification of risks iv) documenting control measures intended to eliminate or reduce the risk that could potentially arise during the conduct of work activities and v) consultation processes with those involved with refrigeration and air-conditioning work.
UEENEEE037A	Document occupational hazards and risks in electrotechnology	This unit deals primarily with the process involved in completing documentation and/or making appropriate modifications to pre-prepared documents. It covers i) occupational work hazard identification ii) identifying health and safety risks to workers iii) classification of risks iv) documenting control measures intended to eliminate or reduce the risk that could potentially arise during the conduct of work activities and v) consultation processes with those involved with electrotechnology work.
UEENEEE038A	Participate in development and follow a personal competency development plan	This unit covers the application of skills and knowledge in taking responsibility for one's own competency development. It encompasses understanding the structure of a competency development plan, participating the development of a personal competency development plan, understanding responsibilities and obligation under competency development plan, following activities for developing competency, self-monitoring competency development and meeting trainee obligations for periodic reporting of competency development activities.
UEENEEE039A	RESERVED	

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE040A	Identify and select components/ accessories/materials for electrotechnology work activities	This unit covers undertaking a schedule of work for selecting appropriately identified components, accessories or materials in an agreed time, to a quality standard and with a minimum of waste, using appropriate technology mediums where required.
UEENEEE041A	Use of routine equipment, plant and/or technologies in an electrotechnology environment	This unit covers routine tools, equipment and personnel protective equipment required to do work in the electrotechnology environment, is used in accordance with the schedule of work to ensure work is completed in an agreed time, to a quality standard and with a minimum waste.
UEENEEE042A	Produce routine products for carrying out electrotechnology work activities	This unit covers routine products required to do work in the electrotechnology environment are produced in accordance with the schedule of work ensuring work is completed in an agreed time, to a quality standard and with a minimum waste.
UEENEEE043A	Produce routine tools/devices for carrying out electrotechnology work activities	This unit covers routine tools/devices required to do work in the electrotechnology environment are produced in accordance with the schedule of work ensuring work is completed in an agreed time, to a quality standard and with a minimum waste.
UEENEEE044A	Apply technologies and concepts to electrotechnology work activities	This unit covers undertake electrotechnology work activities using a range of technologies such as computers , and apply analytical concepts to achieve the desired outcome ensuring work is completed in an agreed time, to a quality standard and with a minimum of waste.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE045A	Apply computation when using equipment/materials/concepts in an electrotechnology environment	This unit covers undertaking computations to produce appropriate results using a range of equipment, materials and concepts in carrying out electrotechnology work activities, whilst ensuring work is completed in an agreed time, to a quality standard and with a minimum of waste.
UEENEEE46A	Identify affects of energy on machinery and materials in an electrotechnology environment	This unit covers affects of energy on machinery and/or materials used in an electrotechnology environment are identified and completed in an agreed time, to a quality standard and using appropriate technology mediums, where required. It encompasses working safely, applying knowledge of identifying the effects of energy on machinery and materials in an electrotechnology environment.
UEENEEE47A	Identify building techniques, methods and materials used in electrotechnology work activities	This unit covers identifying a range of techniques, methods and materials used in electrotechnology work activities, including types of fixing devices, segregation requirements, fixing structures, walls and floor structures, lifting techniques and other related building materials. It encompasses working safely, applying knowledge of identifying building techniques, methods and materials used in electrotechnology work activities.
UEENEEE048A	Carry out routine work activities in an electrotechnology environment	This unit covers undertaking scheduled routine work activities in the electrotechnology industry in an agreed time, to a quality standard and with a minimum of waste It encompasses working safely, applying knowledge of carrying out routine work activities in electrotechnology environments.
UEENEEE049A	Contribute to the operation of support plant and equipment used in electricity supply	This unit covers contributing to the operation of support plant and equipment used in the Electricity Supply Industry for scheduled work in an agreed time, to a quality standard and with a minimum of waste. It encompasses working safely, applying knowledge of contributing to the operation of support plant and equipment used in electricity supply.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE050A	Undertake computations in an electrotechnology environment	This unit covers computational and mathematical procedures to solve problems or to enhance given data. It encompasses working safely, applying knowledge of undertaking computations in electrotechnology environment.
UEENEEE051A	Transport apparatus and materials	This unit covers the transportation of apparatus, plant accessories and materials. It encompasses safe working practices and following work processes that satisfy electrical principles for transporting apparatus/materials.
UEENEEE052A to UEENEEE059A	RESERVED	
UEENEEE060A	Provide solutions for uses of materials and thermodynamic effects	This unit covers the selection and use of appropriate materials and dealing with thermodynamic effects relative to an engineering problem. It encompasses working safely, problem solving procedures, including using measuring instruments, applying appropriate theorems and providing solutions (derived from measurements and calculations) and justification for solutions.
UEENEEE061A	Analyse static and dynamic parameters of equipment	This unit covers the analysis of static and dynamic parameters of equipment associated with plant and machinery. It encompasses working safely, applying extensive knowledge of equipment operation and construction and its application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical machine problems are those encountered in meeting performance requirements and compliance standards, revising machine operating parameters and dealing with machine malfunctions.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE062A	Select drive components for equipment design	This unit covers the selection of drive components based on design concepts for the operation of plant and equipment. It encompasses working safely, apply extensive knowledge of drive component operation and characteristics, their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical drive components are those encountered in meeting performance requirements and compliance standards, revising machine operating parameters and dealing with machine malfunctions.*
UEENEEE063A	Analyse materials for suitability in equipment	This unit covers the analysis of materials for their suitable use in the construction of equipment. It encompasses working safely, apply extensive knowledge of materials and there properties as they relate to equipment construction and operation, gathering and analysing data, applying problem solving techniques, developing and documenting findings, solutions and providing alternatives. **Note**: *Typical drive components are those encountered in meeting performance requirements and compliance standards, revising a machine operating parameters and dealing with machine malfunctions.*
UEENEEE064A	Design machine drives and production layout plans	This unit covers the design of machine drives and the layout of machinery for the efficient production of goods produced by automated equipment. It encompasses working safely, applying extensive knowledge of machine drives and equipment layout arrangements, their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical machine drives and production layout plans are those encountered in meeting performance requirements and compliance standards, production requirements and efficient use of materials and human resources.*
UEENEEE070A	Write specifications for computer systems engineering projects	This unit covers developing requirements to be incorporated into the writing of specifications for computer systems engineering projects. It encompasses determining the safety requirements to be met, establishing client expectations, ensuring cost effective solutions are pursued and documenting design and technical requirements.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE071A	Write specifications for electrical engineering projects	This unit covers developing requirements to be incorporated into the writing of specifications for electrical engineering projects. It encompasses determining the safety requirements to be met, establishing client expectations, ensuring cost effective solutions are pursued and documenting design and technical requirements.
UEENEEE072A	Write specifications for electronics and communications engineering projects	This unit covers developing requirements to be incorporated into the writing of specifications for electronics and communications engineering projects. It encompasses determining the safety requirements to be met, establishing client expectations, ensuring cost effective solutions are pursued and documenting design and technical requirements.
UEENEEE073A	Write specifications for refrigeration and air conditioning engineering projects	This unit covers developing requirements to be incorporated into the writing of specifications for refrigeration and air conditioning engineering projects. It encompasses determining the safety requirements to be met, establishing client expectations, ensuring cost effective solutions are pursued and documenting design and technical requirements.
UEENEEE074A	Write specifications for renewable energy engineering projects	This unit covers developing requirements to be incorporated into the writing of specifications for renewable energy engineering projects. It encompasses determining the safety requirements to be met, establishing client expectations, ensuring cost effective solutions are pursued and documenting design and technical requirements.
UEENEEE075A	Write specifications for industrial electronics and control projects	This unit covers developing requirements to be incorporated into the writing of specifications for industrial electronics and control projects. It encompasses determining the safety requirements to be met, establishing client expectations, ensuring cost effective solutions are pursued and documenting design and technical requirements.
UEENEEE076A	RESERVED	

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Unit Code	Unit Title	Scope/Descriptor
UEENEEE077A	Write specifications for automated systems projects	This unit covers developing requirements to be incorporated into the writing of specifications for automated systems projects. It encompasses determining the safety requirements to be met, establishing client expectations, ensuring cost effective solutions are pursued and documenting design and technical requirements.

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Discipline F – Data and Voice

Unit Code	Unit Title	Scope/Descriptor
UEENEEF001A	Lay and connect cabling for direct access to telecommunication services	This unit covers the installation and termination of telecommunications cabling in buildings and premises. It encompasses working safely and to Australian Communications and Media Authority's 'Restricted' Cabling Provider Rule, installing telephone line, two-pair (quad) cables, terminating on socket outlets, testing and compliance checks and completing cabling documentation.
UEENEEF002A	Lay and connect cables for multiple access to telecommunication services	This unit covers the laying and termination of telecommunications cabling in buildings and premises. It encompasses working safely and to Australian Communications and Media Authority's 'Open' Cabling Provider Rule, installing multiple telephone line, multi-pair cables, backbone cabling, terminating in socket outlets, termination modules and distributors, testing and compliance checks and completing cabling documentation.
UEENEEF003A	Install and maintain cabling for telecommunication services in lifts	This unit covers the installation and termination of telecommunications cabling in buildings and premises. It encompasses working safely and to Australian Communications and Media Authority's 'Lift' Cabling Provider Rule, installing multiple telephone lines, multi-pair cables, backbone cabling, terminating in socket outlets, termination modules and distributors, testing and compliance checks and completing cabling documentation.
UEENEEF004A	Install and modify performance data communication structured cabling	This unit covers the installation and termination of high performance data cabling in buildings and premises, intended for connection to a telecommunications network. It encompasses working safely and to standards, installing multiple data lines and backbones using structured twisted pair cabling, terminating at distributors, termination modules and in socket outlets, testing and compliance checks and completing cabling documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEF005A	Install and modify performance data communication optical fibre cabling	This unit covers the installation and termination of high performance data cabling in buildings and premises and intended for connection to a telecommunications network. It encompasses working safely and to standards, installing multiple data lines and backbones using optical fibre cabling, terminating at distributors, splices and on socket outlets, testing and compliance checks and completing cabling documentation.
UEENEEF006A	Solve problems in data and voice communications circuits	This unit covers providing known solutions to predictable problems in single and multiple path circuits operated at extra-low voltage as they apply to various data and voice communications work functions. It encompasses working safely, problem solving procedures, including the use of basic voltage, current and resistance measuring devices, providing known solutions to predictable communication circuit problems.
UEENEEF007A	Set up the wireless capabilities of communications and data storage devices	This unit covers entering instructions in wireless devices with simple built-in programming function and verifying that the device operates as intended. It encompasses safe working practices, checking device software installation, following written and oral instruction and procedures and completing necessary documentation. **Note**: Examples of wireless devices are personal digital assistants(PDAs), mobile phones, personal computers (PCs) remote controls etc
UEENEEF008A	Select and arrange equipment for wireless networks	This unit covers selecting and arranging wireless access devices, routers and switches for local area and wide area networks intended for connection to a telecommunications network. It encompasses selecting compliant equipment, developing LAN/WAN arrangements that comply with regulation, based on calculated and deemed-to-comply solutions and completing network documentation.
UEENEEF009A	Install and connect voice and data communications equipment	This unit covers the installation, termination and setting up of voice and data equipment for high performance LANs in buildings and premises and intended for connection to a telecommunications network. It encompasses working safely and to standards, installing hubs, routers, switches, decoders, PABXs connected by structured, coaxial and optical fibre cabling, and completing network documentation..

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Unit Code	Unit Title	Scope/Descriptor
UEENEEF010A	Select and arrange equipment for local area networks	This unit covers selecting and arranging voice and data communication cabling routes, socket outlets, termination modules, switches, routers and distributors in LANs intended for connection to a telecommunications network. It encompasses selecting compliant equipment, developing LAN arrangements that comply with regulation, based on calculated and deemed-to-comply solutions and completing network documentation.
UEENEEF011A	Test, report and rectify faults in voice and data installations	This unit covers testing for certification finding and repairing faults in telecommunication installations and local area networks. It encompasses working safely, reading cabling diagrams, performance testing, applying logical fault finding procedures, testing functionality of the network, conducting repairs and completing the necessary documentation.
UEENEEF012A	Install aerial communication cables	This unit covers installation of catenary and aerial communication cables on existing post and poles. It encompasses working safely and to standard and specifications, installing catenary cable, fixing communication cables and completing necessary documentation
UEENEEF013A	Install below-ground communication cables	This unit covers installation of below-ground conduits and ducts and drawing-in communication cables. It encompasses working safely and to standards/specifications, preparing and filling trenches, placing conduits and ducts, drawing cables. It also includes completing necessary documentation.
UEENEEF014A	Set up and configure basic data communications systems	This unit covers setting up, configuring and maintaining operation of personal computer-based data communications systems. It encompasses safe working practices, installing data communications hardware, installing and configuring data communications software and documenting set-up parameters. **Note**: *This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEEF015A	Assemble and connect communication frames and cabinets	This unit covers assembly and connection of communication frames and cabinets. It encompasses working safely, following standards, specifications and component/manufacturer requirements, matching equipment with that specified, terminating and connecting communication wiring and completing necessary documentation.

Discipline G – Electrical

Unit Code	Unit Title	Scope/Descriptor
UEENEEG001A	Solve problems in electromagnetic circuits	This unit covers determining correct operation of electromagnetic circuits and providing solutions as they apply to electrical installations and equipment. It encompasses working safely, power circuit problems-solving processes, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in multiple path circuit.
UEENEEG002A	Solve problems in single and three phase low voltage circuits	This unit covers ascertaining correct operation of single and three phase circuits and solving circuit problems as they apply to servicing, fault finding installation and compliance work functions. It encompasses safe working practices, multi-phase circuit arrangements, issues related to, protection, power factor and MEN systems and solutions to circuit problems derived from calculated and measured parameters.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG003A	Install wiring and accessories for low voltage circuits	This unit covers the installation. in building and premises, of wiring enclosures, cable support systems, cables and accessories – intended to operate at voltages up to 1000 V a.c. or 1500 V d.c. It encompasses working safely and to installation standards, routing cables to specified locations, terminating cables and connecting wiring at accessories and completing the necessary installation documentation. **Note**: *This unit includes the skills and knowledge covered by Unit UEENEEE008A Lay cable and accessories for extra-low voltage circuits.*
UEENEEG004A	Install low voltage electrical apparatus and associated equipment	This unit covers the installation of protection devices, switchgear and controlgear, appliances and luminaries and intended to operate at voltages up to 1000 V a.c. or 1500 V d.c. It encompasses working safely and to installation standards, matching equipment with that specified for a given location, placing and securing equipment accurately, making required circuit connections and completing the necessary installation documentation.
UEENEEG005A	Verify compliance and functionality of general electrical installations	This unit covers inspection and testing to verify whether an electrical installation is safe and complies with all requirements. It encompasses working safely, visual inspections and mandatory, optional and functional test procedures, identifying non-compliance defects and mandatory reporting requirements.
UEENEEG006A	RESERVED	
UEENEEG007A	Select and arrange equipment for general electrical installations	This unit covers selecting equipment for electrical installations operating at voltages up to 1,000V a.c. or 1500 V d.c. to meet performance standards. These encompass schemes for protection of persons and property, correct functioning, compatibility with the supply, arrangement of circuits and selection of switchgear, controlgear, protection devices and wiring based on calculated and deemed-to-comply solutions

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG008A	Find and repair faults in electrical apparatus and circuits	This unit covers finding and repairing faults in electrical apparatus and interconnecting circuits and equipment operating at voltages up to 1,000 V a.c. or 1500 V d.c. It encompasses working safely, reading circuit diagrams, sketching diagrams from traced wiring, logically applying fault finding procedures, conducting repairs and completing the necessary service documentation
UEENEEG009A	Develop and connect control circuits	This unit covers developing, connecting and functionally testing electrical power and control circuits that perform specific control functions. It encompasses working safely; developing schematic/ladder diagrams and converting them to wiring diagrams; selecting and connecting contactors and control devices to perform a specific function
UEENEEG010A	Find and repair faults in d.c. electrical apparatus and circuits	This unit covers finding and repairing faults in electrical apparatus and interconnecting circuits and equipment operating at voltages up to 1500 V d.c. It encompasses working safely, reading circuit diagrams, sketching diagrams from traced wiring, applying logical fault finding procedures, conducting repairs and completing the necessary service documentation
UEENEEG011A	Carry out basic repairs to electrical apparatus	This unit deals with the repair or replacement of mechanical and electrical components of electrical apparatus. It encompasses safe working practices, following written and oral instruction and procedures, basic testing and techniques for dismantling and assembling apparatus and disconnecting and reconnecting components
UEENEEG012A	Solve fundamental problems in electrical systems	This unit covers ascertaining correct operation of electrical systems in building and premises and solving fundamental system problems as applies to engineering support work functions. It encompasses working safely, problem solving techniques, interpreting electrical measurements, providing solutions derived from measurements to predictable problems in electrical systems and providing justification for such solutions
UEENEEG013	Install and maintain emergency systems	This unit covers the installation and maintenance of fire and smoke control, emergency lighting and early warning systems in buildings and premises. It encompasses working safely and to installation and maintenance standards, complying with maintenance schedules and completing the necessary documentation

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG014A	Develop plans and compliance policies to conduct a contracting business	This unit covers the development of plans and policies to ensure regulatory requirements are met in conducting a contracting business, technical, occupational and workplace relation requirements associated with functions and responsibilities of a contracting business. It encompasses applying knowledge of technical regulations and standards, legislated obligations in relation to safety, the environment, heritage sites and employment and human resources. **Note**: *This unit should be undertaken in conjunction with UEENEEE018A Establish, maintain and evaluate OHS systems*
UEENEEG015A	Find and rectify faults in energy supply network equipment	This unit covers finding and rectifying faults in energy supply network electrical equipment. It encompasses working safely, reading circuit and reticulation diagrams, applying logical fault finding procedures, following fault rectification procedures and completing the necessary documentation
UEENEEG016A	Diagnose and rectify faults in lift systems	This unit covers diagnosing and rectifying faults in traction lift systems and equipment. It encompasses working safely, replacing and/or adjustment of lift circuit and associated components, diagnosing and repairing of faults in lift circuits and associated components (including governors, brakes, safety gear, safety devices, lift machines, door components and controllers) and releasing passengers from lifts which have become immobilised
UEENEEG017A	Install electrical power and control equipment for rail network signalling	This unit covers the installation of electrical protection devices, switchgear and controlgear and signalling control equipment used in rail networks and intended to operate at voltages up to 50 to 1,000 V a.c. or 1500 V d.c. It encompasses safe working practices, regulatory requirements and following work procedures, matching equipment with that specified for a given location, terminating cables and connecting wiring and completing the necessary installation documentation
UEENEEG018A	Maintain operation of electrical mining equipment	This unit covers servicing of electrical systems and equipment in underground and open-cut mines. It encompasses working safely, applying knowledge of mining electrical systems and equipment, reading circuit and reticulation diagrams, applying logical fault diagnosis procedures, following fault rectification procedures and maintaining the necessary documentation

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG019A	Maintain operation of electrical marine equipment	This unit covers the servicing of electrical systems and equipment on vessels and ships. It encompasses working safely, applying knowledge of marine electrical systems and equipment, reading circuit and reticulation diagrams, applying logical fault diagnosis procedures, following fault rectification procedures and maintaining the necessary operational documentation.
UEENEEG020A	Select and arrange equipment for special electrical installations	This unit covers selecting and arranging electrical equipment into distribution circuits for installations in caravan parks, construction and demolition sites, marinas, medical treatment areas and moveable premises operating at voltages up to 1000V a.c. or 1500 V d.c. It encompasses schemes for protection of persons and property, correct functioning, compatibility with the supply, arrangement of circuits and selection of switchgear, controlgear, protection devices and wiring based on calculated and deemed-to-comply solutions.
UEENEEG021A	Verify compliance and functionality of special electrical installations	This unit covers testing and visual inspection for verifying that an electrical installation in caravan parks, construction and demolition sites, marinas, medical treatment areas, moveable premises and HV installation in consumer's premises are safe and comply with requirements. It encompasses procedures for safely conducting mandatory and optional tests, conducting visual inspections, identifying non-compliance defects and mandatory reporting requirements. **Note**: *Competency in verifying compliance of installations for hazardous areas is covered by units:* UEENEEM009A Test installations in hazardous areas UEENEEM010A Conduct close inspection of existing hazardous areas installations UEENEEM011A Conduct detailed inspection of hazardous areas installations

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG022A	Conduct compliance inspection of single phase electrical installations	This unit covers inspection of single-phase domestic installations with a demand not exceeding 100 A for verifying compliance with electrical safety regulations. It encompasses working safely, conducting tests and inspections, documenting non-compliance defects, taking/recommending actions resulting from non-compliance defects, applying regulatory requirements and completing inspection reports.
UEENEEG023A	Conduct compliance inspection of electrical installations with demand exceeding 100 A per phase	This unit covers inspection of general electrical installations for verifying compliance with electrical safety regulations. It encompasses working safely, conducting tests and inspections, documenting non-compliance defects, taking/recommending actions resulting from non-compliance defects, applying regulatory requirements and completing inspection reports
UEENEEG024A	Conduct compliance inspection of special electrical installations	This unit covers inspection of electrical installation in marinas, moveable premises and caravan parks, medical treatment centres, construction and demolition sites and HV installation in consumer's premises for verifying compliance with electrical safety regulations. It encompasses working safely, conducting tests and inspections, documenting non-compliance defects, taking/recommending actions resulting from non-compliance defects, applying regulatory requirements and completing inspection reports. **Note**: *Competency in verifying compliance of installations for hazardous areas is covered by units:* UEENEEM009A Test installations in hazardous areas UEENEEM010A Conduct close inspection of existing hazardous areas installations UEENEEM011A Conduct detailed inspection of hazardous areas installations

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG025A	Plan electrical installations with a LV demand up to 400A per phase	This unit covers the planning of circuit and equipment for electrical installations where standardised arrangements for service and CT metering equipment are used, not exceeding 400 A per phase. This encompasses schemes for protection of persons and property, correct functioning, compatibility with the supply, arrangement of circuits, metering and control, cable route planning, specifying type and rating of switchgear, controlgear, protection devices and wiring based on calculated and deemed-to-comply solutions and planning documentation.
UEENEEG026A	Install and maintain field power and distribution systems with a LV demand up to 200 A per phase	This unit covers the installation of electrical power intended to operate at voltages to 1000 V a.c. or 1500 V d.c. It encompasses working safely and to standards, positioning site generator sets, routing cables to specified locations, matching equipment with that specified for a given location terminating cables and connecting accessories and completing the necessary installation documentation.
UEENEEG027A	Design electrical installations with a LV demand greater than 400 A per phase	This unit covers the design of supply and distribution arrangements, control, protection and selection of equipment for electrical installations with low voltage demand greater than 400 amperes per phase. This encompasses designing schemes for protection of persons and property and correct functioning, compatibility with the supply, and arrangement of circuits, determination of fault levels, effective switchgear, control gear, and protection against over current and over and under voltage and wiring based on calculations to meet required safety and performance standards and functional requirements.
UEENEEG028A	Plan switchboard and control panel layouts	This unit covers selecting and arranging equipment in electrical switchboards and control panels operating at voltages up to 1,000V a.c. or 1500 V d.c. and fault levels not exceeding 20 kA. It encompasses arrangements for protection of persons and property, correct functioning, compatibility with the supply, and intended arrangement of circuits and selection of switchgear, controlgear and protection devices based on calculated and deemed-to-comply solutions and planning documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG029A	Overhaul and repair major switchgear / controlgear	This unit covers the overhauling and repairing switchgear/controlgear rated in excess of 20 kA. It requires the ability to establish and document the level of work required, arranging for the overhaul/repair to be carried out, verify compliance of overhauled/repaired switchgear/controlgear and complete the necessary documentation.
UEENEEG030A	Design switchboards rated for high fault levels	This unit covers the design of supply and distribution arrangements, control, protection and selection of equipment for switchboards with low voltage demand greater than 400 amperes per phase. This encompasses designing schemes for protection of persons and property and correct functioning, compatibility with the supply, and arrangement of circuits, determination of fault levels, effective switchgear, control gear, and protection against over current over and under voltage and wiring based on calculations to meet required safety and performance standards and functional requirements.
UEENEEG031A	Evaluate performance of electrical apparatus	This unit covers testing of electrical apparatus for compliance with a standard and regulation for the purpose of certification, approval and/or product quality maintenance. It encompasses safe working practices, determining performance requirements, inspecting, setting up performance tests, evaluating inspection and test results and documenting test outcomes.
UEENEEG032A	Carry out electrical field testing and report findings	This unit covers field testing of electrical systems, circuits and apparatus to determine the cause of faults, malfunctions or compliance. It encompasses working safely and to standards, applying knowledge of electrical measurement and testing, following appropriate test procedures, documenting, evaluating and reporting test results.
UEENEEG033A	RESERVED	

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG034A	Perform high voltage field switching to a given schedule	This unit covers the carrying out of high voltage switching operations involving the operation of circuit breaking and isolation devices from a given switching schedule and according to enterprise procedures. It also encompasses the process of; communicating with the Switching Control Officer or Electrical Control Officer, isolating the electrical equipment and the line or work site, as well as proving that the area is de-energised and earthed, issuing/accepting electrical permits and the returning of the affected circuits to service.
UEENEEG035A	Diagnose and rectify faults in a.c. motor drive systems	This unit covers diagnosing and rectifying faults in systems controlling starting, speed, torque, power output, efficient running and braking of a.c. motors. It encompasses safe working practices, interpreting technical data, applying knowledge of a.c motors operating parameters to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes.
UEENEEG036A	Diagnose and rectify faults in d.c. motor drive systems	This unit covers diagnosing and rectifying faults in systems controlling starting, speed, torque, power output, efficient running and braking of d.c. motors. It encompasses safe working practices, interpreting technical data, applying knowledge of d.c motors operating parameters to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes.
UEENEEG037A	Diagnose and rectify faults in energy supply apparatus	This unit covers diagnosing and rectifying faults in apparatus in energy supply and distribution systems. It encompasses safe working practices, interpreting diagrams and technical data, applying knowledge of energy supply apparatus to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes
UEENEEG038A	Diagnose and rectify faults in electrical energy distribution systems	This unit covers diagnosing and rectifying faults in networks supplying electrical energy to consumers. It encompasses safe working practices, interpreting diagrams and technical data, applying knowledge of energy supply and reticulation systems to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG039A	Diagnose and rectify faults in distributed generation systems	This unit covers diagnosing and rectifying faults in distributed generation systems. It encompasses safe working practices, interpreting diagrams and technical data, applying knowledge of energy supply and reticulation systems to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes.
UEENEEG040A	Develop engineering solutions for energy supply power transformer problems	This unit covers developing engineering solutions to resolve problems with energy supply system protection. It encompasses working safely, apply extensive knowledge of energy supply power transformer operation and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical transformer problems are those encountered in meeting performance requirements and compliance standards, revising a transformer operating parameters and dealing with transformer malfunctions.*
UEENEEG041A	Diagnose and rectify faults in servo drive systems	This unit covers diagnosing and rectifying faults in systems controlling servo and drives. It encompasses safe working practices, interpreting technical data, applying knowledge of servo/stepper drives operating parameters to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes.
UEENEEG042A	Diagnose and rectify faults in electrical energy supply transmission systems	This unit covers diagnosing and rectifying faults in electrical energy transmission systems. It encompasses safe working practices, interpreting diagrams and technical data, applying knowledge of energy supply and transmission systems to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes
UEENEEG043A	Develop engineering solution for synchronous machine problems	This unit covers developing engineering solutions to resolve problems with synchronous machines. It encompasses working safely, apply extensive knowledge of synchronous machine operation, construction and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical machine problems are those encountered in meeting performance requirements and compliance standards, revising a machine operating parameters and dealing with machine malfunctions.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG044A	Develop engineering solutions for d.c. machine problems	This unit covers developing engineering solutions to resolve problems with d.c. machines. It encompasses working safely, apply extensive knowledge of d.c machine operation and construction and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note:** *Typical machine problems are those encountered in meeting performance requirements and compliance standards, revising a machine operating parameters and dealing with machine malfunctions.*
UEENEEG045A	Develop engineering solutions for induction motor problems	This unit covers developing engineering solutions to resolve problems with induction motors. It encompasses working safely, apply extensive knowledge of induction motor operation and construction and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical motor problems are those encountered in meeting performance requirements and compliance standards, revising a motor operating parameters and dealing with motor malfunctions.*
UEENEEG046A	Develop engineering solutions for energy supply system protection problems	This unit covers developing engineering solutions to resolve problems with energy supply system protection. It encompasses working safely, apply extensive knowledge of energy supply system protection operation, protection devices and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical protection problems are those encountered in meeting performance requirements and compliance standards, revising a protection operating parameters and dealing with protection malfunctions.*
UEENEEG047A	Provide computational solutions to power engineering problems	This unit covers the application of computational processes to solving problems encountered in power engineering. It encompasses working safely, applying problem solving techniques, using a range of mathematical processes, providing solutions to power engineering problems and justifying such solutions. **Note:** *Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG048A	Solve problems in complex multiple path power circuits	This unit covers the determining correct operation of complex series-parallel power circuits and providing solutions as they apply to electrical power engineering work functions. It encompasses working safely, problem solving procedures, including electrical measuring devices, applying appropriate circuit theorems and providing solutions derive from measurements and calculations and providing justification for such solutions. **Note:** *Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions.*
UEENEEG049A	Solve problems in complex polyphase power circuits	This unit covers determining correct operation of complex polyphase power circuits and providing solutions as they apply to electrical power engineering work functions. It encompasses working safely, problem solving procedures, including using electrical measuring devices, applying appropriate circuit theorems and providing solutions derived from measurements and calculations and justification for such solutions.
UEENEEG050A	Wind coils	This unit covers setting up coil former and winding machines and winding coils for static and rotating machines. It encompasses working safely, using hand and powered tools, measuring, applying basic knowledge of electrical circuits, following technical instructions and set procedures and recording work activities
UEENEEG051A	Place and connect coils	This unit covers insulating, placing and connecting coils, in a small armatures/stators, transformers and solenoid equipped devices. It encompasses working safely, using hand and powered tools, measuring, applying basic knowledge of electrical circuits, connecting conductors following technical instructions and set procedures and recording work activities
UEENEEG052A	Rewind single phase induction machines	This unit covers dismantling and winding stators for single-phase induction machines. It encompasses working safely, using hand and powered tools, measuring, applying basic knowledge of electrical circuits and winding data, following technical instructions, and set procedures and recording work activities

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG053A	Rewind three phase induction machines rated for low voltage	This unit covers preparing, placing and connecting coils and insulating three phase stators and rotors. It encompasses working safely, using hand and powered tools, measuring, applying knowledge of electrical circuits and stator windings, using testing devices, applying technical and quality standards and keeping winding records
UEENEEG054A	Rewind direct current machines rated for low voltage	This unit covers preparing, placing and connecting coils and insulating direct current motor armatures and poles. It encompasses working safely, using hand and powered tools, measuring, applying knowledge of electrical circuits and stator windings, using testing devices, applying technical and quality standards and keeping winding records.
UEENEEG055A	Rewind three phase induction machines rated for high voltage to 3.3 kV	This unit covers preparing, placing and connecting coils and insulating three phase stators and rotors rated for high voltage to 3.3 kV. It encompasses working safely, using hand and powered tools, measuring, applying knowledge of electrical circuits and HV stator windings, applying technical and quality standards and keeping winding records.
UEENEEG056A	Rewind three phase induction machines rated for high voltage above 3.3 kV	This unit covers preparing, placing and connecting coils and insulating three phase stators and rotors rated for high voltage above 3.3 kV. It encompasses working safely, using hand and powered tools, measuring, applying knowledge of electrical circuits and HV stator windings, applying technical and quality standards and keeping winding records
UEENEEG057A	Conduct electrical tests on low voltage electrical machines	This unit covers electrical safety and functional testing of electrical machines designed to operate at low voltage. It encompasses working safely, setting up and conducting continuity, insulation and short circuit and inspection and testing of iron circuit, interpreting and documenting test results and any resulting corrective actions
UEENEEG058A	Conduct electrical tests on high voltage electrical machines	This unit covers electrical safety and functional testing of electrical machines designed to operate at high voltage. It encompasses working safely, setting up and conducting continuity, insulation and short circuit and inspection and testing of iron circuit, interpreting and documenting test results and any resulting corrective actions.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG059A	Conduct mechanical tests on electrical machines	This unit covers mechanical safety and functional testing of electrical machines and their mechanical components. It encompasses working safely, setting up and conducting tests, taking measurements, interpreting and documenting test results and any resulting corrective actions
UEENEEG060A	Evaluate performance of electrical machines	This unit covers electrical and mechanical safety and performance evaluation of electrical machines across their load range. It encompasses working safely, setting up and conducting evaluation measurements, evaluating performance from measured parameters and documenting results and recommending any resulting corrective actions.
UEENEEG061A	Design and develop modifications to electrical machines	This unit covers the performance and efficiency aspects of electrical machine design as applied to the modification of existing machines. It encompasses designing to given parameters, including those related to safety and efficiency, adhering to compliance standards and compliance assessments and documentation.
UEENEEG062A	Set up and place electrical apparatus and associated circuits into service	This unit covers adjusting and setting up electrical apparatus before placing and checking that they operate as intended. It encompasses working safely and to standards, following specified set up procedures, ensuring safety devices are correctly set, evaluating apparatus and circuit operation against specified parameters and completing necessary documentation
UEENEEG063A	RESERVED	
UEENEEG064A	Repair mechanical components of electrical machines	This unit covers the repair of mechanical components of electrical machines, including basic machining. It encompasses working safely and to standards, following written instructions and drawing, selecting and setting up machine tools, basic machining, measuring and documenting work activities.
UEENEEG065A	Maintain and service traction lifts	This unit covers maintenance and servicing of traction lift systems and equipment. It encompasses working safely, conducting site cleaning, lubricating and painting lift equipment, inspecting of suspension, governors, compensators, floor selector and tappet switch ropes, and carrying out periodic testing on lift safety gear.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG066A	Installation and maintenance of escalators, moving walks and tread ways	This unit covers installation and maintenance of escalators, moving walks and tread ways, including repair or replacement of escalator handrails, cleaning, lubricating, replacement and adjustment of mechanical components. It encompasses working safely.
UEENEEG067A	Align and install lift equipment	This unit covers alignment and installation of lift mechanical and electrical equipment. It encompasses working safely, alignment of lift structures such as measuring, marking out and aligning of lift installations including machine room equipment, lift well equipment, the lift car and associated equipment and landing door frames and doors, setting out of multiple lift wells in varying configurations and the installation of well and pit equipment, lift car equipment, superstructure and counterweights, machine room equipment, landing, door frames and door, landing buttons and indicator boxes.
UEENEEG068A	Diagnose and rectify faults in complex lift systems	This unit covers diagnosing and rectifying faults in complex traction lift systems and equipment. It encompasses working safely, replacing and/or adjustment of solid state/electrical circuitry and components, diagnosing and repairing of complex faults in lift circuits and associated components (including governors, brakes, safety gear, safety devices, lift machines, door components and controllers).
UEENEEG069A	Manage electrical projects	This unit covers the management of electrical projects involving design, modifications, installation and/or maintenance of systems and equipment. It encompasses management of safety, budget variation, personnel, resources, critical path timelines and completion documentation.
UEENEEG070A	Plan electrical projects	This unit covers development and documentation of electrical project proposals, milestones and completions. It encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines

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Unit Code	Unit Title	Scope/Descriptor
UEENEEG071A	Install and set up interval metering	This unit covers the installation and set up of interval metering for measurement of energy use by consumers under choice of supplier arrangement. It encompasses working safely and to installation and set-up standards, evaluating the integrity of metering wiring and earthing systems, fixing metering, making power and communication connections, setting meter parameters and completing the necessary documentation.
UEENEEG072A	Investigate and report on electrical incidents	This unit covers investigating and reporting possible electrical cause(s) of incidents resulting electric shock, injury, fatality or property damage. It encompasses working safely, gathering information from an incident site and from witnesses, conducting site tests, gathering and arranging for analysis of forensic evidence, documenting findings and presenting evidence in court.

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Discipline H – Electronic

Unit Code	Unit Title	Scope/Descriptor
UEENEEH001A	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies	This unit deals with the repair of computer equipment by replacement of slot/plug connected modules/sub-assemblies. It encompasses safe working practices, following written and oral instruction and procedures, basic testing techniques, dismantling and assembling apparatus and disconnecting and reconnecting components.
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components	This unit deals the repair or replacement of non-electrical components and replacement of discrete and integrated components of electronic apparatus. It encompasses safe working practices, following written and oral instruction and procedures, basic testing and techniques, dismantling and assembling apparatus and disconnecting and reconnecting components.
UEENEEH003A	Carry out routine repairs to business equipment	This unit covers the confirmation of predicable faults and repair of such faults, including replacement of mechanical components and of discrete and integrated components of business electronic equipment. It encompasses safe working practices, following written and oral instruction and routine testing and repair procedures, verifying equipment operation and reporting.
UEENEEH004A	Set up and test residential audio/video equipment	This unit covers setting up of non-fixed audio and video equipment as directed in user manuals in a residential or business environment. It encompasses safe working practices, connection and secure and optimum placement of system components, following written and oral instruction and procedures and customer relations.
UEENEEH005A	Verify compliance and functionality of custom electronic installations	This unit covers testing and visual inspection for verifying that a custom electronic system and components are safe and comply with requirements and functions as intended. It encompasses working safely, conducting compliance tests, conducting visual inspections, identifying non-compliance defects and mandatory reporting requirements.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH006A	Assemble and set up fixed audio/video components and systems in buildings and premises	This unit covers installing of fixed audio/video components and systems in a residential or business environment. It encompasses safe working practices; secure placement and connection of system components, following written and oral instruction and procedures and customer relations.
UEENEEH007A	Carry out repairs of predictable faults in general electronic apparatus	This unit covers identifying predicable faults and repairing by replacement of subassemblies in electronic apparatus. It encompasses safe working practices, interpreting circuit diagrams and service manuals, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation
UEENEEH008A	Assemble and erect reception antennae and signal distribution equipment	This unit covers the installation, positioning and securing of terrestrial and satellite arrays and dishes and associated amplifiers and the reticulation of cables and connection of multiple access outlets and associated equipment. It encompasses safe working practices, selection of antennae and distribution components, installation techniques, use of testing devices and following written and oral instruction and procedures.
UEENEEH009A	Set up and test gaming/games equipment	This unit covers the setting up of electronic gaming and games equipment to manufacturer instructions in compliance with regulations. It encompasses safe working practices, connection and secure placement of gaming/games equipment, following written and oral instruction and procedures and customer relations
UEENEEH010A	Install commercial audio/video system components	This unit covers installation of components for audio/video facilities in buildings and premises. It encompasses working safely and to specifications and standards, matching equipment with that specified for a given location, terminating and interconnecting cables/conductors and completing the necessary installation documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH011A	Solve problems in d.c. power supplies with single phase input	This unit covers determining correct operation of independent power supplies and power supply sections of electronic apparatus. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predicable problems in d.c. power supplies with single phased input
UEENEEH012A	Solve problems in digital components of electronic apparatus	This unit covers determining correct operation of digital components of electronic apparatus. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predicable problems in digital components circuits.
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus	This unit covers determining correct operation of discrete component amplifier sections of electronic apparatus. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predicable problems in amplifier sections/circuits.
UEENEEH014A	Solve problems in frequency dependent circuits	This unit covers determining correct operation of resonance circuits used in electronic apparatus. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predicable problems in resonance circuits.
UEENEEH015A	Solve problems in microprocessor based hardware and firmware	This unit covers determining correct operation of microprocessor hardware and firmware. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predicable problems in microprocessor hardware and firmware.
UEENEEH016A	Find and repair faults in the microwave amplifier sections in electronic apparatus	This unit covers fault finding and repair of microwave amplifier sections in electronic apparatus. It encompasses safe working practices, interpreting circuit diagrams, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH017A	Carry out repairs of predictable faults in audio and video replay/recording apparatus	This unit covers identifying predicable faults and repairing by replacement of subassemblies in CD, DVD and tape replay/recording apparatus. It encompasses safe working practices, interpreting circuit diagrams and service manuals, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation
UEENEEH018A	Find and repair faults in electronic apparatus	This unit covers fault finding and repairing of general electronic apparatus. It encompasses safe working practices, consulting apparatus service manuals, interpreting circuit diagrams, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.
UEENEEH019A	Carry out repairs of predictable faults in television receivers	This unit covers identifying predictable faults and their repair by replacement of subassemblies in televisions. It encompasses safe working practices, interpreting circuit diagrams and service manuals, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.
UEENEEH020A	Find and repair faults in gaming and games equipment	This unit covers fault finding and repair of gaming equipment. It encompasses safe working practices, interpreting circuit diagrams, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.
UEENEEH021A	Find and repair faults in high volume office equipment	This unit covers fault finding and repair in high volume photo copiers (40 to 80 ppm), fax machines etc. It encompasses safe working practices, interpreting electrical and mechanical diagrams, applying knowledge of office equipment to logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation
UEENEEH022A	Find and repair faults in remote control apparatus	This unit covers fault finding and repair in remote control apparatus and devices. It encompasses safe working practices, interpreting circuit diagrams, applying knowledge of remote control to logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH023A	Find and repair faults in microwave heating apparatus	This unit covers fault finding and repair in microwave ovens. It encompasses safe working practices, interpreting circuit diagrams, applying knowledge of microwave heating to logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.
UEENEEH024A	Carry out repairs of predictable faults in audio components	This unit covers identifying predictable faults and repairing by replacement of subassemblies in audio components. It encompasses safe working practices, interpreting circuit diagrams and service manuals, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation
UEENEEH025A	Provide solutions to single phase electronic power control problems	This unit covers solving problems with electronic aspects of single phase power control devices and circuits. It encompasses safe working practices, interpreting diagrams, applying knowledge of electronic power control devices and their application, using effective problem solving techniques, safety and functional testing and reporting work activities and outcomes. **Note:** *Typical single phase electronic power control problems are those encountered in meeting performance requirements and compliance standards, revising control operating parameters and dealing with control malfunctions.*
UEENEEH026A	Provide solutions to polyphase electronic power control problems	This unit covers solving problems with electronic aspects of polyphase power control devices and circuits. It encompasses safe working practices, interpreting diagrams, applying knowledge of electronic power control devices and their application, using effective problem solving techniques, safety and functional testing and reporting work activities and outcomes. **Note:** *Typical polyphase electronic power control problems are those encountered in meeting performance requirements and compliance standards, revising control operating parameters and dealing with control malfunctions.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH027A	Commission commercial radio frequency (RF) transmission and reception systems	This unit covers the setting up and adjusting of RF transmission and reception systems for optimum performance. It encompasses safe working practices, signal testing and analysis, adjusting equipment, following procedures and documenting.
UEENEEH028A	Install microwave and antennae and waveguides	This unit covers the installation and testing of waveguides and antennae for microwave communications systems. It encompasses working safely and to installation standards, matching hardware and accessories with that specified for a given location, installation techniques, pre commission adjustment of antennas and waveguides and following instruction and procedures.
UEENEEH029A	Diagnose and rectify faults in navigation systems	This unit covers fault finding and repair of faults in navigation systems. It encompasses safe working practices, interpreting circuit diagrams, applying logical diagnostic methods and knowledge of navigation system components, rectifying faults, safety and functional testing and completing the necessary service documentation.
UEENEEH030A	Diagnose and rectify faults in satellite-based surveillance and observation systems	This unit covers fault finding and repair of faults in surveillance and observation systems. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of surveillance system components, rectify faults, safety and functional testing and completing the necessary service documentation.
UEENEEH031A	Diagnose and rectify faults in radar apparatus and systems	This unit covers fault finding and repair of faults in radar apparatus and systems. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of radar system components, rectifying faults, safety and functional testing and completing the necessary service documentation.
UEENEEH032A	Diagnose and rectify faults in global positioning systems	This unit covers fault diagnosis and rectification in global positioning systems. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of GPS system components, rectify faults, safety and functional testing and completing the necessary service documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH033A	Diagnose and rectify faults in telecommunication apparatus and systems	This unit covers fault diagnosis and rectification in telecommunication apparatus and systems. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of telecommunication system components, rectifying faults, safety and functional testing and completing the necessary service documentation.
UEENEEH034A	Diagnose and rectify faults in electronic medical equipment	This unit covers diagnosing and rectifying faults in the electronic aspects of electronic medical equipment. It encompasses safe working practices, interpreting process and circuit diagrams, applying knowledge of medical process controls to logical diagnosis procedures, rectifying faults, safety and functional testing and completing the necessary service documentation.
UEENEEH035A	Design custom electronic installations	This unit covers the design of home entertainment aspects of custom electronic installations and energy control systems. It encompasses developing control scenarios based on a design brief, negotiating with architect/designer, builder and client, applying knowledge of electronic audio/video components, home theatre acoustics and relevant electrical installation regulations, developing design drawings and obtaining approval for final design.
UEENEEH036A	Design commercial audio/video installations	This unit covers the design of audio/video facilities in meeting rooms, classrooms, studios, theatres and halls etc. It encompasses applying knowledge of electronic audio/video components, acoustics and visual displays, analogue and digital communication, multimedia storage and reproduction, negotiating with clients and others and documenting design.
UEENEEH037A	Program and commission commercial audio/video systems	This unit covers testing, adjusting and balancing of audio/video facilities in meeting rooms, classrooms, studios, theatres and halls etc. It encompasses working safely and to specifications, measuring and adjusting necessary parameters to meet specified performance, working with clients and documenting and certifying set performance parameters.
UEENEEH038A	Find and repair faults in complex power supplies	This unit covers fault finding and repair of regulated and switch mode power supplies. It encompasses safe working practices, interpreting circuit diagrams, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH039A	Solve problems in basic amplifier circuits	This unit covers determining correct operation of basic amplifier circuits. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in basic amplifier circuits.
UEENEEH040A	Diagnose and rectify faults in sonar apparatus and systems	This unit covers fault finding and repair of faults in sonar apparatus and systems. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of sonar system components, rectify faults, safety and functional testing and completing the necessary service documentation.
UEENEEH041A	Manage and implement electronic projects	This unit covers the management and implementation of electronic projects involving design, modifications, installation, and/or maintenance of systems and equipment. It encompasses management of safety, budget variation, personnel, resources, and critical path timelines and completion documentation.
UEENEEH042A	Solve problems in oscillator sections of electronic apparatus	This unit covers determining correct operation of discrete component and modularised oscillator sections of electronic apparatus. It encompasses working safely, problem solving procedures, including the use of voltage, current, resistance and phase measuring devices, providing solutions derived from measurements and calculations to predictable problems in oscillator sections/circuits.
UEENEEH043A	Diagnose and rectify faults in digital subsystems of electronic controls	This unit covers diagnosing and rectifying faults in digital components of electronic control systems. It encompasses safe working practices, interpreting diagrams and technical data, applying knowledge of digital subsystems to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH044A	Diagnose and rectify faults in analogue circuits and components in electronic control systems	This unit covers diagnosing and rectifying faults in analogue applications in electronic control systems. It encompasses safe working practices, interpreting diagrams and technical data, applying knowledge of analogue circuits and components to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes. **Note**: *Examples of analogue applications are power and differential amplifiers, integrators, comparators function generators precision rectifiers, active filters.*
UEENEEH045A	Develop solutions to analogue electronic problems	This unit covers developing engineering solutions to resolve problems with analogue electronics. It encompasses working safely, apply extensive knowledge of analogue electronics circuit and device operation and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical analogue electronic problems are those encountered in meeting performance requirements and compliance standards, revising an analogue electronic operating parameters and dealing with analogue electronic malfunctions.*
UEENEEH046A	Solve fundamental problems in electronic communications systems	This unit covers ascertaining correct operation of communications systems and solving fundamental system problems as met in engineering support work functions. It encompasses working safely, problem solving techniques, the use of a range of measuring devices, providing solutions derived from measurements to predictable problems in electronic communication systems.
UEENEEH047A	Assess compliance of electronic apparatus	This unit covers assessing electronic apparatus for compliance with a standard and/or regulation for the purpose of certification or approval. It encompasses safe working practices, determining specified requirements, inspecting, setting up performance tests, evaluating inspection and test results and documenting evaluation outcomes.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH048A	Design and develop advance digital systems	This unit covers development of digital electronic systems in engineering product development work. It encompasses working safely, following design brief, applying knowledge of digital components/devices, interpreting device/component specifications, constructing prototype devices, applying programming techniques to programmable devices, testing developed system prototype operation and documenting design and development work
UEENEEH049A	Develop solutions to audio electronic problems	This unit covers developing engineering solutions to resolve problems with audio electronics. It encompasses working safely, applying extensive knowledge of audio electronics circuits and device operation and application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical audio electronic problems are those encountered in meeting performance requirements and compliance standards, revising audio electronic operating parameters and dealing with audio electronic malfunctions.*
UEENEEH050A	Assemble and set up basic wired and wireless security systems	This unit covers installing electronic security systems with up to 50 connected devices typically used in single domestic and small commercial premises. It encompasses, working safely and to standards, following oral and written instructions and procedures, securely placing and connecting security system components, and applying customer relation protocols.
UEENEEH051A	Install large wired and wireless security systems	This unit covers installing, entering instructions and testing of electronic security systems with in excess of 50 connected devices in building, premises and precincts. It encompasses working safely and to standards, following and job specifications, securely placing and connecting security system components, and applying customer relation protocols.
UEENEEH052A	Enter instructions and test basic wired and wireless security systems	This unit covers entering instructions and testing electronic security systems with up to 50 connected devices typically used in single domestic and small commercial premises. It encompasses safe working practices, basic programming as directed in user manuals, adjusting security devices, system testing and following written and oral instruction and procedures and customer relations.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH053A	Program and test large wired and wireless security systems	This unit covers programming functions and testing electronic security systems with in excess of 50 connected devices in buildings, premises and precincts. It encompasses safe working practices, programming, adjusting security devices, system testing and following written and oral instruction and procedures and customer relations.
UEENEEH054A	Program and commission commercial security alarm systems	This unit covers installation and testing of security alarm system typically used in commercial buildings and premises. It encompasses working safely, following specifications and security access scenarios, programming security alarm functions, using circuit diagrams and schedules, and providing as-programmed document.
UEENEEH055A	Program and commission commercial security access control systems	This unit covers installation and testing of security access control system typically used in commercial buildings and premises. It encompasses working safely, following specifications and security access scenarios, programming security functions, using circuit diagrams and schedules, and providing as-programmed document.
UEENEEH056A	Program and commission commercial security closed circuit television (CCTV) systems	This unit covers installation and testing of security CCTV systems typically used in commercial buildings and premises. It encompasses working safely, following specifications and security observation scenarios, programming security functions, using circuit diagrams and schedules, and providing as-programmed document
UEENEEH057A	Develop basic integrated security systems plan	This unit covers integrating security components to form a complete security system with up to 100 connected intrusion and access devices and based on common security scenarios. It encompasses applying knowledge of common security scenarios and security network standards and protocols, selecting network topology and physical media, disaster recovery planning, performance management and documentation of work activities

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH058A	Design integrated security systems for a single site	This unit covers integrating security components to form a security system with multiple and interrelated subsystems. It encompasses applying knowledge of security scenarios and security network standards and protocols, selecting network topology and physical media, disaster recovery planning, performance management and negotiating with clients and others and documenting design.
UEENEEH059A	Design integrated complex security systems	This unit covers integrating security components to form a complex security system across multiple sites with multiple and related subsystems and remote monitoring and control. It encompasses applying knowledge of security scenarios and security network standards and protocols, selecting network topology and physical media, disaster recovery planning, performance management and negotiating with clients and others and documenting design.
UEENEEH060A	Plan electronic projects	This unit covers the development and documentation of electronics project proposals, milestones and completions. It encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.
UEENEEH061A	Position and terminate fire detection and warning system apparatus	This unit covers installing electronic fire detection and warning systems in buildings and premises. It encompasses, working safely and to standards, following oral and written instructions and procedures, securely placing and connecting fire detection system and warning components and applying customer relation protocols.
UEENEEH062A	Verify compliance and functionality of fire protection installations	This unit covers testing and visual inspection to verify that a fire protection system and components are safe and comply with requirements and functions as intended. It encompasses working safely, conducting compliance tests, conducting visual inspections, identifying non-compliance defects and mandatory reporting requirements.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH063A	Enter and verify programs in preparation for commissioning fire protection systems	This unit covers programming fire protection systems that include multiple connected detection, warning and fire control devices and remote monitoring. It encompasses working safely, applying knowledge of fire protection scenarios, using fire protection standards and protocols, entering system instructions, testing functionality of fire protection components and system operation, and documentation of commissioning activities.
UEENEEH064A	Commission commercial fire protection systems	This unit covers commissioning fire protection systems that include multiple connected detection, warning and fire control devices and remote monitoring. It encompasses working safely, applying knowledge of fire protection scenarios, using fire protection standards and protocols, entering system instructions, testing functionality of fire protection components and system operation, and documentation of commissioning activities.
UEENEEH065A	Find and repair faults in fire protection systems	This unit covers fault finding and repair of fire protection systems that include multiple connected detection, warning and fire control devices and remote monitoring to the sub-assembly level. It encompasses safe working practices, interpreting circuit diagrams, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.
UEENEEH066A	Fault find micro-controller-based hardware	This unit covers determining correct operation of micro-controller hardware and firmware. It encompasses working safely, problem solving procedures, providing solutions derived from measurements and calculations to predictable faults in micro-controller hardware and firmware.
UEENEEH067A to UEENEEH069A	RESERVED	

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH070A	Terminate and connect components, conductors, wiring and cables for electronic circuits	This unit covers the implementation, performance and evaluation of component connections and terminations of conductors, wiring, cables, and other recognised mediums. It encompasses implementing reliable termination and connection processes, working to specifications, safe use of connection and termination tools, safe use of termination and/or soldering devices, selection and placement of components, termination and connection preparation, termination and connection techniques, and evaluating termination and connection work.
UEENEEH071A	Find and repair faults in television receivers	This unit covers fault finding and repair of faults in signal processing and scanning and deflection sections of television receivers. It encompasses safe working practices, interpreting circuit diagrams, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.
UEENEEH072A	Find and repair faults in the RF sections of electronic apparatus	This unit covers fault finding and repair of radio frequency sections in electronic apparatus. It encompasses safe working practices, interpreting circuit diagrams, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.
UEENEEH073A	Find and repair faults in professional audio reproduction components	This unit covers fault finding and repair of professional and high-end audio amplifiers, pre-amplifiers, receivers, graphic equalisers, speakers. It encompasses safe working practices, interpreting circuit diagrams, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.
UEENEEH074A	Find and repair faults in audio/video recording equipment	This unit covers fault finding and repair of ACR, CD, VCR and DVD players/recorders. It encompasses safe working practices, interpreting circuit diagrams, applying logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH075A	Find and rectify faults and malfunctions in security system installations	This unit covers fault finding and repair of security system installations. It encompasses safe working practices, interpreting circuit diagrams, applying knowledge of security systems to logical fault finding procedures, rectifying faults/malfunctions, safety and functional testing and completing the necessary service documentation.
UEENEEH076A	Diagnose and rectify faults in display circuits	This unit covers fault finding and repair of faults in cathode ray tubes, liquid crystal and plasma display circuits. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of display circuit components, rectifying faults, safety and functional testing and completing the necessary service documentation.
UEENEEH077A	Diagnose and rectify faults in recording and replay apparatus	This unit covers fault finding and repair of faults in SACD, DVD and DVDA recording and replay apparatus. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of recording and replay apparatus components, rectifying faults, safety and functional testing and completing the necessary service documentation.
UEENEEH078A	Diagnose and rectify faults in camera circuits	This unit covers fault finding and repair of faults in camera circuits. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of camera circuit components, rectifying faults, safety and functional testing and completing the necessary service documentation.
UEENEEH079A	Diagnose and rectify faults in digital television apparatus	This unit covers fault finding and repair of faults in digital television apparatus. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of digital television apparatus circuit components, rectifying faults, safety and functional testing and completing the necessary service documentation.
UEENEEH080A	Diagnose and rectify faults in digital transmission systems	This unit covers fault finding and repair of faults in digital transmission systems. It encompasses safe working practices, interpreting diagrams, applying logical diagnostic methods and knowledge of digital transmission systems circuit components, rectifying faults, safety and functional testing and completing the necessary service documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEH081A	Design printed circuit boards	This unit covers the design of printed circuit boards and component loading ready for manufacture. It encompasses application of knowledge of electronic circuits, components, component assemblies, developing alternative design schemes based on design brief, customer relations and documenting designs.
UEENEEH082A	Develop solutions to RF amplifier problems	This unit covers developing engineering solutions to resolve problems with RF amplifiers. It encompasses working safely, applying extensive knowledge of RF amplifier circuits and device operation and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical RF amplifiers electronic problems are those encountered in meeting performance requirements and compliance standards, revising an RF amplifier electronic operating parameters and dealing with RF amplifiers electronic malfunctions.*
UEENEEH083A	Analyse the performance of wireless based electronic systems	This unit covers the analysis of wireless based electronic systems to provide solutions to mobile communications performance. It encompasses working safely, applying extensive knowledge of mobile communications parameters, gathering and analysing data, applying problem solving techniques, developing and documenting results and solutions for use in design work.
UEENEEH084A	Design DSP based systems	This unit covers designing electronic DSP-based systems incorporating DSPs and other digital and analogue elements. It encompasses working safely, following design brief, applying knowledge of digital and analogue devices, interpreting device specifications, constructing prototypes, testing developed prototype operation and documenting design and development work.
UEENEEH085A	Design electronic data acquisition systems	This unit covers designing electronic data acquisition systems incorporating sensors and transducers and digital and analogue elements. It encompasses working safely, following design brief, applying knowledge of digital and analogue devices, interpreting device specifications, constructing prototypes, testing developed system prototype operation and documenting design and development work.

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Discipline I – Instrument

Unit Code	Unit Title	Scope/Descriptor
UEENEEI001A	Install and set up transducers and sensing devices	This unit covers the installation and setting up of transducers and sensors. It encompasses working safely and to installation standards, matching equipment with that specified for a given location, placing and securing equipment accurately, making required pneumatic, hydraulic and electrical circuit connections, adjusting and setting up devices to specifications and manufacturer instructions and completing the necessary installation documentation.
UEENEEI002A	Solve problems in pressure measurement systems	This unit covers setting up pressure measuring systems and providing solutions to pressure measurement problems as they apply to various process and control work functions. It encompasses working safely, setting up and calibrating pressure measuring systems, problem solving techniques, the use of a range of measuring devices, providing solutions derived from measurements and calculations to predictable problems in pressure measurement systems.
UEENEEI003A	Solve problems in density/level measurement systems	This unit covers setting up density/level measuring systems and providing solutions to density/level measurement problems as they apply to various process and control work functions. It encompasses working safely, setting up and calibrating density/level measuring systems, problem solving techniques, the use of a range of measuring devices, providing solutions derived from measurements and calculations to predictable problems in density/level measurement systems
UEENEEI004A	Solve problems in flow measurement systems	This unit covers setting up flow measuring systems and providing solutions to flow measurement problems as they apply to various process and control work functions. It encompasses working safely, setting up and calibrating flow measuring systems, problem solving techniques, the use of a range of measuring devices, providing solutions derived from measurements and calculations to predictable problems in flow measurement systems.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEI005A	Solve problems in temperature measurement systems	This unit covers setting up temperature measuring systems and providing solutions to temperature measurement problems as they apply to various process and control work functions. It encompasses working safely, setting up and calibrating temperature measuring systems, problem solving techniques, the use of a range of measuring devices, providing solutions derived from measurements and calculations to predictable problems in temperature measurement systems.
UEENEEI006A	Solve problems in process controllers, transmitters and converters	This unit covers providing solutions to predictable problems in process controllers, transmitters and converters. It encompasses working safely, applying logical problem solving procedures, evaluating performance, the use of measuring devices, providing solutions to predictable control problems, and documenting solutions.
UEENEEI007A	Install process instrumentation and control cabling and tubing	This unit covers the installation and termination of instrument and control cabling and tubing for chemical, industrial or food processing systems or equipment used in medical procedures. It encompasses working safely and to standards, routing cables and tubing to specified locations, terminating cables and tubing and connecting wiring at accessories and at instruments and control apparatus and completing the necessary installation documentation.
UEENEEI008A	Install process control apparatus and associated equipment	This unit covers the installation of measurement, monitoring and control apparatus and associated equipment. It encompasses working safely and to installation standards, matching equipment with that specified for a given location, placing and securing equipment accurately, making required pneumatic, hydraulic and electrical circuit connections and completing the necessary installation documentation.
UEENEEI009A	Set up process measuring and control instruments	This unit covers the calibration of instruments for measuring chemical and physical characteristics as it applies to the control of processes. It encompasses working safely and to standards, following set-up and calibration procedures, testing and reporting.
UEENEEI010A	Set up and adjust process control loops	This unit covers basic setting up and adjustment of controllers and control elements to specified output. It encompasses working safely and to standards, following set-up and adjustment procedures, applying knowledge of process requirements, testing and reporting

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Unit Code	Unit Title	Scope/Descriptor
UEENEEI011A	Find and rectify faults in process control valve and associated equipment	This unit covers finding and repairing faults in control valves, actuators and positioners. It encompasses working safely, interpreting valve specifications, applying knowledge of control valve operating parameters, conducting tests and repairs and completing the necessary service documentation.
UEENEEI012A	Verify compliance and functionality of process control installations	This unit covers pre-commissioning testing and visual inspection for verifying that installed process control apparatus in non-hazardous areas is safe and complies with requirements. It encompasses procedures for safely conducting safety tests, conducting visual inspections, identifying non-compliance defects and reporting requirements.
UEENEEI013A	Select equipment for process control systems	This unit covers selecting equipment for process control systems to meet performance standards. It encompasses the adoption of process control schemes that meet safety and process requirements, selection of control equipment and interconnecting cabling and tubing/piping based on calculated and deemed-to-comply arrangements.
UEENEEI014A	Find and rectify faults in process control systems	This unit covers finding and rectifying faults in process control apparatus and systems. It encompasses safe working practices, interpreting process and circuit diagrams, applying knowledge of process controls to logical fault finding procedures, conducting repairs, safety and functional testing and completing the necessary service documentation.
UEENEEI015A	Find and rectify faults in medical equipment control systems	This unit covers finding and rectifying faults in medical equipment systems. It encompasses safe working practices, interpreting process and circuit diagrams, applying knowledge of medical process controls to logical fault finding procedures, effective repairs, safety and functional testing and completing the necessary service documentation.
UEENEEI016A	RESERVED	
UEENEEI017A	Calibrate and test measuring instruments	This unit covers calibration, adjustment and testing of measuring instruments. It encompasses working safely and to standards, following calibration and adjustment procedures, applying knowledge of parameters to be measured, testing and reporting.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEI018A	RESERVED	
UEENEEI019A	Set up field control devices	This unit covers setting up field control devices such as transducers, sensors, and actuators. It encompasses working safely, following design brief, applying knowledge of device operating principles, interpreting device specifications, following manufacturer's set up specifications, testing device operation and documenting set up parameters.
UEENEEI020A	Provide solutions to problems in basic industrial control systems	This unit covers solving problems in basic industrial control systems. It encompasses safe working practices, interpreting process and circuit diagrams, applying knowledge of industry controls to problem solving techniques, safety and functional testing and completing the necessary documentation. **Note**: *Typical basic industrial control system problems are those encountered in meeting performance requirements and compliance standards, revising control operating parameters and dealing with control malfunctions.*
UEENEEI021A	Find and repair faults in measuring and analysis systems	This unit covers finding and repairing faults in measuring and analysis systems. It encompasses working safely, reading circuit diagrams and device specifications, applying logical fault finding procedures, conducting repairs and completing the necessary service documentation.
UEENEEI022A	Assist in commissioning process control systems	This unit covers commissioning of process control systems. It encompasses working safely and with others, complying with requirements, applying knowledge of process and control components, pre-commissioning tests, following start up procedures, checking and adjusting components and controls to ensure efficient and safe operation and completing commissioning documentation
UEENEEI023A	Design electronic control systems	This unit covers designing electronic control systems incorporating closed loop and digital and analogue elements. It encompasses working safely, following design brief, applying knowledge of digital and analogue devices, interpreting device specifications, constructing prototypes, using appropriate development software, applying programming techniques, testing developed system prototype operation and documenting design and development work.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEI024A	RESERVED	
UEENEEI025A	Provide solutions to fluid circuit operations	This unit covers the solution to problems associated with the operation of fluid controlled circuits. It encompasses working safely, problem solving procedures, including using measuring instruments, applying appropriate circuit theorems and providing solutions derived from measurements and calculations and justification for such solutions.
UEENEEI026A	Provide solutions to pneumatic/hydraulic system operations	This unit covers the set up and maintenance of pneumatic and hydraulic systems. It encompasses working safely, problem solving procedures, including using measuring instruments, applying appropriate circuit theorems and providing solutions derived from measurements and calculations and justification for such solutions.
UEENEEI027A	Analyse complex electronic circuits controlling fluids	This unit covers the analysis of complex electronic control circuits that integrate with the operation of fluid control systems on machinery. It encompasses working safely, applying extensive knowledge of equipment and electronic and fluid control circuit operations, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical problems are those encountered in meeting performance requirements and compliance standards, revising a machine operating parameters and dealing with machine malfunctions.*
UEENEEI028A	Set up controls on complex fluid systems	This unit covers the setting up, adjustment, maintenance and modification of electronically controlled complex systems that are integrated with hydraulic devices. It encompasses working safely, applying extensive knowledge of complex circuits designed to operate fluid systems and the integration to hydraulics, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical problems are those encountered in meeting performance requirements and compliance standards, revising a machine operating parameters and dealing with machine malfunctions.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEEI029A	Set up electronically controlled mechanically operated complex systems	This unit covers the setting up, adjustment, maintenance and modification of electronically controlled mechanically operated complex systems. It encompasses working safely, applying extensive knowledge of electronic circuits and the integration to mechanically operated equipment and systems, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical problems are those encountered in meeting performance requirements and compliance standards, revising a machine operating parameters and dealing with machine malfunctions.*
UEENEEI030A	Set up electronically controlled robotically operated complex systems	This unit covers the setting up, adjustment, maintenance and modification of electronically controlled robotically operated complex systems. It encompasses working safely, applying extensive knowledge of electronic circuits and the integration to robotically operated equipment and systems, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives. **Note**: *Typical circuits are those encountered in meeting performance requirements and compliance standards, revising a machine operating parameters and dealing with machine malfunctions.*
UEENEEI031A to UEENEEI033A	RESERVED	
UEENEEI034A	Manage control projects	This unit covers the management of control projects involving design, modifications, installation, and/or maintenance of systems and equipment. It encompasses the management of safety, budget variation, personnel, resources, critical path timelines and completion of documentation.
UEENEEI035A	Plan control projects	This unit covers the development and documentation of control project proposals, milestones and completions. It encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEI036A	Manage automated systems projects	This unit covers the management of automated systems projects involving design, modifications, installation, and/or maintenance of systems and equipment. It encompasses management of safety, budget variation, personnel, resources, critical path timelines and completion of documentation.
UEENEEI037A	Plan automated systems projects	This unit covers development and documentation of automated systems project proposals, milestones and completions. It encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.

Discipline J – Refrigeration and Air-Conditioning

Unit Code	Unit Title	Scope/Descriptor
UEENEEJ001A	RESERVED	
UEENEEJ002A	Prepare refrigerant tubing and fittings	This unit covers the basic connection of refrigeration and air conditioning piping/tubing and fittings. It encompasses the safe use of hand, fixed and portable power tools for cutting, flaring, bending, swaging, silver brazing copper tube to copper tube, bundy tube and brass and steel fittings, measurement and reading drawings and diagrams.
UEENEEJ003A	Determine the basic operating conditions of vapour compression systems	This unit covers the determination of the operating conditions of vapour compression systems. It encompasses working safely, determining refrigerant pressures and temperatures and relevant air and water temperatures using measurement and basic calculation methods.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ004A	Determine the basic operating conditions of air conditioning systems	This unit covers the determination of the basic operating conditions of air conditioning systems. It encompasses working safely, determining air temperature, air flow rates and relative humidity using measurement and basic calculation methods.
UEENEEJ005A	Position, assemble and start up split air conditioning systems	This unit covers the assembly, installation, starting up and decommissioning of single head split air conditioning systems up to a maximum of 18kWr refrigeration capacity. It encompasses working safely and to standards, following routine procedures to install equipment, connecting pipe work, pressure testing, evacuating, perform functional checks and complete installation / regulatory documentation. **Note**: *The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 may apply to this unit. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included.*
UEENEEJ006A	Install pipework for refrigeration and air conditioning systems	This unit covers the installation, in buildings and premises, of refrigerant piping/tubing, fittings, flow controls, pressure sensing controls, and accessories for refrigeration and air conditioning systems. It encompasses working safely and to installation standards, routing pipe work to specified locations, connecting components and accessories and documenting installation work.
UEENEEJ007A	Install refrigeration and air conditioning systems, major components and associated equipment	This unit covers the installation of unitary equipment, compressors, condensers, evaporators, liquid receivers, safety and cycling controls, ventilation and air handling (excluding central plant) and associated equipment. It encompasses working safely and to installation standards to match equipment with that specified for a given specification and location, connecting pipe work and components, and complete the necessary installation documentation.
UEENEEJ008A	Recover, pressure and leak test, evacuate and charge refrigerants	This unit covers pressure and leak testing, evacuating, charging and recovery of refrigerants and lubricants from refrigeration systems and air conditioning systems. It encompasses working safely and to standards, following regulations and industry practices for handling refrigerants and lubricants, and completing the necessary documentation. **Note**: *Refrigeration systems may be those used for refrigerating or for air conditioning.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations	This unit covers testing and visual inspection for verifying that a refrigeration and air conditioning system and components are safe, comply with requirements and functions as intended. It encompasses working safely, conducting compliance tests, conducting visual inspections, identifying non-compliance defects and mandatory reporting requirements.
UEENEEJ010A	Select refrigerant pipe/tube, accessories and associated controls	This unit covers the selection of refrigerant pipe/tube, accessories and controls for refrigeration and air conditioning installations to comply with regulations, standards and specifications. It encompasses developing pipe work arrangements, selecting pipe work, refrigeration equipment and mechanical and electrical control devices based on calculated and deemed-to comply solutions and documenting all selection information.
UEENEEJ011A	Diagnose and rectify faults in refrigeration and air conditioning systems and components	This unit covers diagnosing, repairing faults and replacing faulty components in refrigeration and air conditioning systems, components, interconnecting circuits and equipment operating at voltages up to 1,000 V a.c. It encompasses working safely, reading electrical circuit diagrams, refrigeration, hydronic and air distribution system diagrams and manufacturers reference material, sketching diagrams from traced wiring and piping systems, applying logical fault finding procedures, conducting repairs, replacing components and completing the necessary service documentation.
UEENEEJ012A	Diagnose and rectify faults in complex refrigeration/air conditioning systems	This unit covers diagnosing and rectifying faults in complex refrigeration/air conditioning systems. It encompasses safe working practices, interpreting technical data, applying knowledge of complex refrigeration/air conditioning systems operating parameters to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ013A	Commission refrigeration and air conditioning systems	This unit covers commissioning of refrigeration and air conditioning systems. It encompasses working safely and to standards to commission the whole system and includes pre-commissioning tests, starting up the system, optimising the refrigerant charge, basic air and water balancing and adjustment, checking and adjusting components and controls to ensure their efficient and balanced operation, and completing commissioning documentation.
UEENEEJ014A	Solve problems in hydronic systems	This unit covers solving problems in hydronic systems. It encompasses working safely and to standards, applying knowledge of the components and solving problems in hydronic systems, using effective problem solving techniques and documenting solutions.
UEENEEJ015A	Solve problems in beverage dispensers	This unit covers solving problems in beverage dispensers. It encompasses working safely and to standards, applying knowledge of the components and operation of beverage dispensers, using effective problem solving techniques and documenting solutions.
UEENEEJ016A	Solve problems in transport refrigeration systems	This unit covers solving problems in transport refrigeration systems. It encompasses working safely and to standards, applying knowledge of the components and operation of transport refrigeration systems, using effective problem solving techniques and documenting solutions.
UEENEEJ017A	Solve problems in ultra-low temperature refrigeration systems	This unit covers solving problems in ultra-low temperature refrigeration systems, including compound and cascade systems. It encompasses working safely and to standards, applying knowledge of the components and operation of ultra-low temperature refrigeration systems, using effective problem solving techniques and documenting solutions.
UEENEEJ018A	Solve problems in post mix refrigeration systems	This unit covers solving problems in post mix refrigeration systems. It encompasses working safely and to standards, applying knowledge of the components and operation of post mix refrigeration systems, using effective problem solving techniques and documenting solutions.
UEENEEJ019A	Solve problems in ice making systems	This unit covers solving problems in ice making systems. It encompasses working safely and to standards, applying knowledge of the components and operation of ice making systems, using effective problem solving techniques and documenting solutions.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ020A	Solve problems in industrial refrigeration systems	This unit covers solving problems in industrial refrigeration systems. It encompasses working safely and to standards, applying knowledge of the components and operation of industrial refrigeration systems, using effective problem solving techniques and documenting solutions.
UEENEEJ021A	Monitor and adjust energy management systems on refrigeration systems	This unit covers the setting up and adjusting energy management systems on refrigeration systems for effective energy use. It encompasses safe working practices, system parameter testing and analysis, adjusting equipment and controls, following procedures and documenting final operating parameters and settings.
UEENEEJ022A	Diagnose faults in complex refrigeration or HVAC control systems	This unit covers diagnosing and rectifying faults in complex refrigeration or heating, ventilation and air conditioning (HVAC) control systems. It encompasses safe working practices, interpreting technical data, applying knowledge of complex refrigeration or heating, ventilation and air conditioning (HVAC) control systems operating parameters to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes.
UEENEEJ023A	Commission complex heating, ventilation and air conditioning systems	This unit covers the setting up and adjusting of complex heating, ventilation and air conditioning (HVAC) systems for optimum performance. It encompasses safe working practices, system parameter testing and analysis, adjusting equipment and controls, following procedures and documenting final operating parameters and settings.
UEENEEJ024A	Commission hydronic systems for refrigeration and/or air conditioning	This unit covers the setting up and adjusting of hydronic systems for refrigeration and/or air conditioning for optimum performance. It encompasses safe working practices, system parameter testing and analysis, adjusting equipment and controls, following procedures and documenting final operating parameters and settings.
UEENEEJ025A	Commission complex refrigeration systems	This unit covers the setting up and adjusting of complex refrigeration systems for optimum performance. It encompasses safe working practices, system parameter testing and analysis, adjusting equipment and controls, following procedures and documenting final operating parameters and settings.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ026A	Commission complex control systems for refrigeration/air conditioning	This unit covers the setting up and adjusting of complex control systems for refrigeration and air conditioning for optimum performance. It encompasses safe working practices, system parameter testing and analysis, adjusting equipment and controls, following procedures and documenting final operating parameters and settings.
UEENEEJ027A	Determine thermodynamic parameters of refrigeration and air conditioning systems	This unit covers the determination of the thermodynamic parameters of refrigeration and air conditioning systems. It encompasses working safely, determining thermodynamic parameters of using measurement and basic calculation methods and documenting results.
UEENEEJ028A	Produce HVAC/R design drawings	This unit covers interpreting technical data and project specifications and produce HVAC/R design drawing. It encompasses safe working practices, interpreting technical data and specifications, applying knowledge heating, ventilation, air conditioning and/or refrigeration systems design drawing protocols, using appropriate drawing tools and documenting design.
UEENEEJ029A	Determine the heat loads for commercial refrigeration and air conditioning applications	This unit covers the determination of the heat loads for commercial refrigeration and air conditioning applications. It encompasses working safely, determining heat loads using quick selection, short form paper and computer based methods and documenting results.
UEENEEJ030A	Produce HVAC/R control system design diagrams	This unit covers interpreting technical data and project specifications and produce HVAC/R control system diagrams. It encompasses safe working practices, interpreting technical data and specifications, applying knowledge heating, ventilation, air conditioning and/or refrigeration control systems drawing protocols, using appropriate drawing tools and documenting design.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ031A	Provide solutions to vibration problems in HVAC/R system design	This unit covers the solution for the appropriate selection and use of materials relative to vibration problems in HVAC/R system. It encompasses working safely, problem solving procedures, including using measuring instruments, applying appropriate theorems and providing solutions derived from measurements and calculations and justification for such solutions.
UEENEEJ032A	Design commercial refrigeration systems	This unit covers the design of commercial refrigeration systems. It encompasses applying knowledge of refrigeration and food storage technology, refrigeration system components and piping, safety and regulatory requirements, following design specifications and customer requirements and documenting system designs.
UEENEEJ033A	Design industrial refrigeration systems	This unit covers the design of industrial refrigeration systems. It encompasses applying knowledge of refrigeration and food storage technology, industrial refrigeration system components and piping, safety and regulatory requirements, following design specifications and customer requirements and documenting system designs.
UEENEEJ034A	Design heating, ventilation and air conditioning (HVAC) systems	This unit covers the design of heating, ventilation and air conditioning systems. It encompasses applying knowledge of commercial air conditioning systems, components and piping, safety and regulatory requirements, following design specifications and customer requirements and documenting system designs
UEENEEJ035A	Design control systems for a heating, ventilation, air conditioning or refrigeration system	This unit covers the design control systems for a heating, ventilation, air conditioning or refrigeration system. It encompasses applying knowledge of refrigeration and air conditioning, control systems components, safety and regulatory requirements, following design specifications and customer requirements and documenting system designs.
UEENEEJ036A	Evaluate and report on energy management	This unit covers evaluation of energy management building services plant and machinery. It encompasses working safely, setting up and conducting evaluation measurements, evaluating energy use from measured parameters and reporting results including recommending any resulting corrective actions.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ037A	Evaluate and report on air quality in buildings	This unit covers evaluation of air quality in building. It encompasses working safely, setting up and conducting evaluation measurements, evaluating air quality from measured parameters and reporting results including recommending any resulting corrective actions
UEENEEJ038A	Analyse noise and vibration in refrigeration and air conditioning systems	This unit covers the analysis of refrigeration and air conditioning systems to provide solution to noise and vibration issues. It encompasses working safely, apply extensive knowledge of noise, vibration and thermodynamic parameters, gathering and analysing data, applying problem solving techniques, developing and documenting results and solutions for use in design work.
UEENEEJ039A	Develop specifications and prepare drawings for HVAC/R projects	This unit covers specification development and documentation of HVAC/R projects. It encompasses safe working practices, following a design brief, applying knowledge heating, ventilation, air conditioning and/or refrigeration systems to selecting system components, operating within established project budget and developing project specifications and design drawings.
UEENEEJ040A	Manage refrigeration and air conditioning projects	This unit covers the management of refrigeration and air conditioning projects involving design, modifications, installation, and/or maintenance of systems and equipment. It encompasses management of safety, budget, variation, personnel, resources, and critical path timelines all necessary progress and completion documentation.
UEENEEJ041A	Design complex commercial refrigeration system	This unit covers the design of complex commercial refrigeration systems. It encompasses applying knowledge of complex commercial refrigeration systems, safety and regulatory requirements, developing alternative design schemes based on a design brief and customer requirements and documenting system designs.
UEENEEJ042A	Design complex industrial refrigeration systems	This unit covers the design of complex industrial refrigeration systems. It encompasses applying knowledge of industrial refrigeration systems, safety and regulatory requirements, developing alternative design schemes based on a design brief and customer requirements and documenting system designs.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ043A	Design complex air conditioning systems	This unit covers the design of complex air conditioning systems. It encompasses applying knowledge of complex air conditioning systems, safety and regulatory requirements, developing alternative design schemes based on a design brief and customer requirements and documenting system designs.
UEENEEJ044A	Design mechanical ventilation/exhaust systems	This unit covers the design of mechanical ventilation/exhaust systems. It encompasses applying knowledge mechanical ventilation/exhaust systems, safety and regulatory requirements, developing alternative design schemes based on a design brief and customer requirements and documenting system designs.
UEENEEJ045A	Design hydronic systems	This unit covers the design of hydronic systems. It encompasses applying knowledge of hydronic systems, safety and regulatory requirements, developing alternative design schemes based on a design brief and customer requirements and documenting system designs
UEENEEJ046A	Design complex control systems for a heating, ventilation, air conditioning or refrigeration system	This unit covers the design of complex control systems for heating, ventilation, air conditioning or refrigeration system. It encompasses applying knowledge of complex control systems for a heating, ventilation, air conditioning or refrigeration system, safety and regulatory requirements, developing alternative design schemes based on a design brief and customer requirements and documenting system designs.
UEENEEJ047A	Audit energy use for a commercial HVAC/R systems	This unit covers assessing the energy used by commercial HVAC/R systems in relation to its performance for the purpose of improving efficiency and/or certification as meeting energy efficiency standards. It encompasses safe working practices, determining efficiency requirements, setting up performance and energy tests, evaluating results and documenting test outcomes.
UEENEEJ048A	Audit HVAC/R control systems for compliance with standards and regulations	This unit covers control safety and performance evaluation of heating, ventilating, air conditioning and refrigeration control systems across their operating range. It encompasses working safely, setting up and conducting evaluation measurements, evaluating performance from measured parameters and documenting results and recommending any resulting corrective actions.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ049A	Develop specifications for heat exchanger design	This unit covers the analysis of refrigeration parameters and develop specification for heat exchanger design. It encompasses working safely, apply extensive knowledge of refrigeration parameters, gathering and analysing data, developing and documenting results and solutions for use in design work.
UEENEEJ050A	Evaluate alternative and new technologies applicable electrotechnology applications	This unit covers evaluation of alternative and new technologies applicable to. It encompasses working safely, comparing manufacturer's technical data for alternative or new technologies with specifications for a proposed project, conducting evaluation tests, evaluating systems/components from technical data, calculations and/or measured parameters and reporting findings for use in design work.
UEENEEJ051A	Service small appliances and power tools	This unit covers maintaining the effective and efficient operation of small appliances and power tools. It encompasses working safely, applying knowledge of small appliances and power tools, following service manuals, testing appliance function, locating and rectifying faults and defective components and completing the necessary service documentation.
UEENEEJ052A	Carry out repairs to appliance refrigeration systems	This unit covers the repairing appliance refrigeration systems refrigerated appliances. It encompasses working safely, following service manuals, locating and replacing faulty refrigeration components, evacuating and recharging refrigerant and completing service reports.
UEENEEJ053A	Find and rectify faults in appliance motors and associated controls	This unit covers finding and repairing faults in appliance motors and associated controls. It encompasses working safely, applying knowledge of appliance motor systems and their controls, reading circuit diagrams, sketching diagrams from traced circuits, applying logical fault finding procedures, conducting repairs and completing the necessary service documentation
UEENEEJ054A	Find and rectify faults in appliance control devices and systems	This unit covers finding and repairing faults in appliance control systems and devices. It encompasses working safely, applying knowledge of appliance control systems and devices, reading circuit diagrams, sketching diagrams from traced circuits, applying logical fault finding procedures, conducting repairs and completing the necessary service documentation

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ055A	Service refrigerated appliances	This unit covers maintaining the effective and efficient operation of refrigerated appliances. It encompasses working safely, applying knowledge of refrigerated appliance, following service manuals, testing appliance function, locating and rectifying faults and defective components and completing the necessary service documentation
UEENEEJ056A	Service clothes washers and dryers	This unit covers maintaining the effective and efficient operation of clothes washes and dryers. It encompasses working safely, applying knowledge of clothes washes and dryers, following service manuals, testing appliance function, locating and rectifying faults and defective components and completing the necessary service documentation.
UEENEEJ057A	Service electric heating appliances	This unit covers maintaining the effective and efficient operation of electric heating appliances. It encompasses working safely, applying knowledge of electric heating appliances, following service manuals, testing appliance function, locating and rectifying faults and defective components and completing the necessary service documentation.
UEENEEJ058A	Service dish washing machines	This unit covers maintaining the effective and efficient operation of dish washing machines. It encompasses working safely, applying knowledge of dish washing machines, following service manuals, testing appliance function, locating and rectifying faults and defective components and completing the necessary service documentation.
UEENEEJ059A	Service gas appliances	This unit covers maintaining the effective and efficient operation of gas appliances. It encompasses working safely, applying knowledge of the gas appliance, following service manuals, testing appliance function, locating and rectifying faults and defective components and completing the necessary service documentation.
UEENEEJ060A	Service room air conditioners	This unit covers maintaining the effective and efficient operation of room air conditioners. It encompasses working safely, applying knowledge of room air conditioners, following service manuals, testing appliance function, locating and rectifying faults and defective components and completing the necessary service documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ061A	Verify compliance and functionality of appliances	This unit covers testing and visually inspecting appliances to verifying that they are safe and comply with requirements. It encompasses procedures for conducting safety and functionality tests, conducting visual inspections, identifying non-compliance defects, documenting results and recommendations and initiating the rectification of any defect.
UEENEEJ062A	Recover, pressure and leak test, evacuate and charge refrigerants/appliances	This unit covers the recovery of refrigerants from appliances, pressure and leak tests, recover and charge refrigerants in appliances. It encompasses working safely and to standards, following regulations and industry practices for handling refrigerants and completing the necessary documentation. **Note**: *Refrigeration systems may be those used for refrigerating or for air conditioning.*
UEENEEJ063A	Analyse the psychrometric and thermodynamic performance of HVAC/R systems	This unit covers the analysis of heating, ventilating, air conditioning and refrigeration (HVAC/R) systems to provide solution to psychrometric and thermodynamic performance issues. It encompasses working safely, apply extensive knowledge of psychrometric and thermodynamic parameters, gathering and analysing data, applying problem solving techniques, developing and documenting results and solutions for use in design work.
UEENEEJ064A	Analyse the operation of HVAC/R systems	This unit covers the analysis the operating parameters of heating, ventilating, air conditioning and refrigeration (HVAC/R) systems to determine whether performance requirements are being met. It encompasses working safely, apply knowledge of operating parameters, gathering and analysing data, applying problem solving techniques, developing and documenting results and solutions for use in design work.
UEENEEJ065A	Evaluate fluid and thermodynamic parameters of refrigeration systems	This unit covers evaluation of fluid and thermodynamic parameters of refrigeration systems. It encompasses working safely, setting up and conducting evaluation measurements, evaluating fluid and thermodynamic parameters from measured parameters and reporting results for use in design work.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ066A	Solve problems in dairy refrigeration systems	This unit covers solving problems in dairy refrigeration systems. It encompasses working safely and to standards, applying knowledge of the components and operation of dairy refrigeration systems, using effective problem solving techniques and documenting solutions.
UEENEEJ067A	Solve problems in central plant air conditioning systems	This unit covers solving problems in central plant air conditioning systems. It encompasses working safely and to standards, applying knowledge of the components and operation of central plant systems, using effective problem solving techniques and documenting solutions.
UEENEEJ068A	Maintain microbial control of air and water systems	This unit covers the quality assurance and risk management compliance processes for maintenance of the air and water systems associated with refrigeration and air conditioning. It encompasses working safely and to technical, quality and risk management standards, work specifications and maintenance schedules, sample inspections, evaluating components and completing the necessary maintenance documentation.
UEENEEJ069A	Plan refrigeration and air conditioning projects	This unit covers development and documentation of refrigeration and air conditioning project proposals, milestones and completions. It encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.
UEENEEJ070A	Diagnose and rectify faults in refrigeration and air conditioning control systems	This unit covers diagnosing, repairing faults and replacing faulty components in refrigeration and air conditioning control systems, components, interconnecting circuits and equipment operating at voltages up to 1000 V a.c. It encompasses working safely, reading circuit diagrams, system diagrams and manufacturers reference material, sketching diagrams from traced wiring, applying logical fault finding procedures, conducting repairs, replacing components and completing the necessary service documentation.
UEENEEJ071A	Solve problems in refrigerated beverage vending cabinets	This unit covers solving problems in refrigerated beverage vending cabinets. It encompasses working safely and to standards, applying knowledge of the components and operation of refrigerated beverage vending cabinets, using effective problem solving techniques and documenting solutions.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEJ072A	Recover, pressure and leak test, evacuate and charge refrigerants – split air conditioning systems	This unit covers the recovery of refrigerants from split air conditioning systems pressure and leak tests, recover and charge refrigerants in split air conditioning systems. It encompasses working safely and to standards, following regulations and industry practices for handling refrigerants and completing the necessary documentation. **Note**: *The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 may apply to this unit. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included.*
UEENEEJ073A	Service microwave ovens	This unit covers maintaining the effective and efficient operation of microwave ovens. It encompasses working safely, applying knowledge of microwave ovens, following service manuals, testing appliance function, locating and rectifying faults and defective components and completing the necessary service documentation.

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Discipline K – Renewable and Sustainable

Unit Code	Unit Title	Scope/Descriptor
UEENEEK001A	Maintain safety and tidiness of remote area power supply (RAPS) systems	This unit covers maintaining safety of RAPS system by ensuring that only RAPS equipment is present and is in its allotted place and that the system is free of litter. It encompasses working safely, regularly checking systems, cleaning techniques and reporting safety issues.
UEENEEK002A	Work safely with remote area power supply (RAPS) systems	This unit covers safety practices for working on RAPS systems. It encompasses identifying safety hazards, using risks control measures and following routine procedures for prescribed system maintenance. **Note**: *Components of this unit are included in the critical aspects of evidence in each applicable unit to ensure that OHS practices are demonstrated as they apply to RAPS system servicing work functions and situations.*
UEENEEK003A	Conduct periodic maintenance of remote area power supply (RAPS) battery banks	This unit covers maintenance of remote area power supply battery banks where the exposed voltage is not greater than 50 V a.c. or 120 V d.c. It encompasses working safely and to maintenance standards and following maintenance routines, identifying known types of battery faults using routine procedures and completing the necessary maintenance reporting.
UEENEEK004A	Conduct periodic maintenance of remote area power supply (RAPS) generator sets	This unit covers maintenance of remote area power supply generator sets where the exposed voltage is not greater than 50 V a.c. or 120 V d.c. It encompasses working safely and to maintenance standards and following maintenance routines, identifying known types of generator faults using routine procedures and completing the necessary maintenance reporting.
UEENEEK005A	Conduct periodic maintenance of remote area power supply (RAPS) photo voltaic arrays	This unit covers maintenance of remote area power supply photo voltaic arrays where the exposed voltage is not greater than 50 V a.c. or 120 V d.c. It encompasses working safely and to maintenance standards and following maintenance routines, identifying known types of photo voltaic array faults using routine procedures and completing the necessary maintenance reporting.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEK006A	Conduct periodic maintenance of remote area power supply (RAPS) wind generators	This unit covers maintenance of remote area power supply wind generators where the exposed voltage is not greater than 50 V a.c. or 120 V d.c. It encompasses working safely and to maintenance standards and following maintenance routines, identifying known types of wind generator faults using routine procedures and completing the necessary maintenance reporting.
UEENEEK007A	Conduct checks in the demand side use of remote area power supplies	This unit covers checking the community's use of a remote area power supply. This encompasses working safely, taking system readings, replacing the data logging chip, identifying known types of systems faults caused by inappropriate use of electrical apparatus supplied from a remote area power supply system and completing the necessary check report.
UEENEEK008A	Plan periodic maintenance schedules of remote area power supplies	This unit covers plant maintenance planning and scheduling. It encompasses developing and self managing a simple maintenance programs, replacing some specified components and reporting of maintenance work
UEENEEK009A	Attend to breakdowns in remote area power supplies	This unit covers attending to a breakdown of remote area power supplies. It encompasses working safely, ascertaining the nature of a breakdown, the extent of repairs required and the personnel needed to repair the breakdown, and reporting so arrangements can be made for the repair work to be carried out. It also encompasses undertaking specified minor repairs.
UEENEEK010A	Coordinate maintenance of renewable energy apparatus and systems	This unit covers coordinating the maintenance of renewable energy apparatus and systems. It encompasses working safely, following maintenance schedules, ascertaining the extent of any repairs required, and the personnel needed to repair the breakdown, providing technical support to maintenance personnel and reporting.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEK011A	Assemble and connect remote area power supplies (RAPS)	This unit covers installation of remote area power supply systems where the exposed voltage is not greater than 50 V a.c. or 120 V d.c. It encompasses working safely and to installation standards, matching equipment with that specified for a given location, placing and securing equipment accurately, making required circuit connections and completing the necessary installation documentation.
UEENEEK012A	Provide basic sustainable energy solutions for energy reduction in domestic premises	This unit covers monitoring energy use and providing basic sustainable energy options to reduce the energy consumption in domestic residences. It encompasses working safely and providing basic sustainable energy solutions for energy reduction in domestic premises.
UEENEEK013A	Apply sustainable energy practice in daily activities	This unit covers applying sustainable energy practices in daily activities both at and outside the workplace. It encompasses applying sustainable energy practice in daily activities.
UEENEEK014A	Promote sustainable energy practice in the community	This unit covers the promotion of recognised, safe, sustainable energy practices to others in the community.
UEENEEK015A	RESERVED	
UEENEEK016A	RESERVED	
UEENEEK017A	Maintain and repair facilities associated with remote area essential services operation	This unit covers basic maintenance of remote area infrastructure facilities. It encompasses working safely and to maintenance standards and following maintenance routines, identifying deterioration and damage to facilities using routine procedures and completing the necessary maintenance reporting.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEK018A	Maintain operation of remote area water facilities	This unit covers maintenance of remote area water collection, storage and treatment facilities. It encompasses working safely to maintenance standards and following maintenance routines, identifying known types of water facility faults using routine procedures and completing the necessary maintenance reporting.
UEENEEK019A	Maintain operation of remote area waste water facilities	This unit covers maintenance of remote area waste water facilities. It encompasses working safely and to maintenance standards and following maintenance routines, identifying known types waste water faults using routine procedures and completing the necessary maintenance reporting.
UEENEEK020A	Maintain operation of remote area power plant	This unit covers maintenance of remote area power plant where the exposed voltage is not greater than 50 V a.c. or 120 V d.c. It encompasses working safely and to maintenance standards and following maintenance routines, identifying known types of power plant faults using routine procedures and completing the necessary maintenance reporting..
UEENEEK021A	Manage renewable energy projects	This unit covers the management of renewable energy projects involving design, modifications, installation, and/or maintenance of systems and equipment. It encompasses management of safety, budget, variation, personnel, resources, and critical path timelines all necessary progress and completion documentation.
UEENEEK022A	Plan renewable energy projects	This unit covers development and documentation of renewable energy project proposals, milestones and completions. It encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.
UEENEEK023A	Carry out basic repairs to renewable energy apparatus by replacement of components	This unit deals with the replacement of electrical and non-electrical components of renewable energy apparatus. It encompasses safe working practices, following written and oral instructions and procedures, basic testing techniques, disconnecting and reconnecting electrical/electronic components, dismantling and assembling apparatus and reporting repair activities.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEK024A	Assemble and set up photovoltaic apparatus in domestic dwellings	This unit covers installing of photovoltaic apparatus in domestic dwellings. It encompasses safe working practices; secure placement and connection of apparatus, following written and oral instruction and procedures and customer relations.
UEENEEK025A	Solve basic problems in photovoltaic energy apparatus	This unit covers providing known solutions to predicable problems in photovoltaic energy apparatus operated at extra-low voltage. It encompasses working safely, problem solving procedures, including the use of basic voltage, current and resistance measuring devices, providing known solutions to predicable circuit problems.
UEENEEK026A	Install and set up grid connected photovoltaic power systems	This unit covers the installation, adjustment and set-up of photovoltaic power systems and connecting to a supply grid inverter. It encompasses working safely and to installation standards, matching components with that specified for a given location, placing and securing system components accurately, making required circuit connections and completing the necessary installation documentation.
UEENEEK027A	Diagnose faults in renewable energy control systems	This unit covers diagnosing and rectifying faults in renewable energy control systems. It encompasses working safely, reading circuit diagrams, sketching diagrams from traced wiring, logically applying fault finding procedures, conducting repairs and completing the necessary service documentation.
UEENEEK028A	Solve problems in stand-alone renewable energy systems	This unit covers providing known solutions to predicable problems in stand-alone renewable energy systems operated at extra-low voltage. It encompasses working safely, problem solving procedures, including the use of basic voltage, current and resistance measuring devices, providing known solutions to predicable circuit problems.
UEENEEK029A	Design renewable energy heating systems	This unit covers the design of renewable energy heating systems and their installation. It encompasses following design briefs, incorporating schemes for protection of persons and property from dangers of system malfunction, ensuring other safety and performance standards and functional requirements are meet and documenting design calculations and criteria.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEK030A	Solve problems in wind energy conversion systems	This unit covers providing known solutions to predicable problems in wind energy conversion systems. It encompasses working safely, problem solving procedures, including the use of basic voltage, current and resistance measuring devices, providing known solutions to predicable circuit problems.
UEENEEK031A	Design wind energy conversion systems rated to 10 kW.	This unit covers the design of wind energy conversion systems and their installation. It encompasses following design briefs, incorporating schemes for protection of persons and property from dangers of system malfunction, ensuring other safety and performance standards and functional requirements are meet and documenting design calculations and criteria.
UEENEEK032A	Develop strategies to address sustainability issues	This unit covers developing strategies to address greenhouse gases and sustainability issues. It encompasses working safely, apply extensive knowledge of sustainable energy systems and components and their operating parameters, gathering and analysing data, applying problem solving techniques, developing and documenting alternatives solutions.
UEENEEK033A	Design set up hybrid power systems	This unit covers the design of hybrid power systems and their installation. It encompasses following design briefs, incorporating schemes for protection of persons and property from dangers of system malfunction, ensuring other safety and performance standards and functional requirements are meet and documenting design calculations and criteria.
UEENEEK034A	RESERVED	
UEENEEK035A	Design grid connected power supply systems	This unit covers the design of grid connected power supply systems and their installation. It encompasses following design briefs, incorporating schemes for protection of persons and property from dangers of system malfunction, ensuring other safety and performance standards and functional requirements are meet and documenting design calculations and criteria.
UEENEEK036A	RESERVED	

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Unit Code	Unit Title	Scope/Descriptor
UEENEEK037A	Install and set up micro-hydro systems	This unit covers the installation and adjustment and set-up of micro-hydro systems. It encompasses working safely and to installation standards, matching components with that specified for a given location, placing and securing system components accurately, making required circuit connections and completing the necessary installation documentation
UEENEEK038A	Design micro-hydro systems	This unit covers the design of micro-hydro systems and their installation. It encompasses following design briefs, incorporating schemes for protection of persons and property from dangers of system malfunction, ensuring other safety and performance standards and functional requirements are meet and documenting design calculations and criteria.
UEENEEK039A	Design stand-alone renewable energy systems	This unit covers the design of stand-alone renewable energy systems and their installation. It encompasses following design briefs, incorporating schemes for protection of persons and property from dangers of system malfunction, ensuring other safety and performance standards and functional requirements are meet and documenting design calculations and criteria.
UEENEEK040A	Develop engineering solution to renewable energy problems	This unit covers developing engineering solutions to resolve problems with renewable energy. It encompasses working safely, apply extensive knowledge of renewable energy systems and components and their operating parameters, gathering and analysing data, applying problem solving techniques, developing and documenting alternatives solutions.
UEENEEK041A	Develop strategies for effective energy reduction in buildings	This unit covers evaluating energy used in buildings and developing and documenting strategies/methods to effectively reduce energy use without compromising occupancy standards. It encompasses working safely, setting up and conducting evaluation measurements and evaluating energy use from measured parameters.

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Discipline L – Imported units

Unit Code	Unit Title	Scope/Descriptor
ICTTC056C	Install telecomm network equipment	This unit may apply to switching, transmission and radio (both fixed and mobile) network and the various transmission paths, ie cable, optic fibre, radio, microwave and satellite. The unit applies to installation of both new, additional and replacement equipment. Termination of cables are covered broadly in this standard and thus it should be read in conjunction with Telecommunications Cabling Competency Standards: - Unit ICTTC008C –Terminate metallic conductor cable - Unit ICTTC010C – Place, secure and terminate optical fibre cable - Unit ICTTC011C – Place, secure and terminate coaxial cable
ICTTC083C	Locate and rectify complex CPE fault (PABX repair)	This unit applies to all contexts for indoor and outdoor installation within a customer premises and applies to both customer premises cabling and customer premises equipment. The unit applies to all communications applications whether digital or analogue including telephony, data, video including digital broadcasting, computer networks, including LANs, WANs and multi media. This unit may be applied to domestic, commercial or industrial installations.
ICTTC085	Monitor, analyse and action alarms	This unit may apply to switching, transmission and radio (both fixed and mobile) network and the various transmission paths, ie cable, optic fibre, radio, microwave and satellite.
ICTTC088C	Locate and rectify network faults	This unit may apply to switching, transmission and radio (both fixed and mobile) network and the various transmission paths, ie cable, optic fibre, radio, microwave and satellite. The unit applies to computer systems, including Local Area Networks (LANs) and Wide Area Networks (WANs).

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Unit Code	Unit Title	Scope/Descriptor
UETTDRIS04A	Perform high voltage field switching operation to a given schedule	This unit covers the carrying out of high voltage switching operations involving the operation of circuit breaking and isolation devices from a given switching schedule and according to enterprise procedures. It also encompasses the process of; communicating with the Switching Control Officer or Electrical Control Officer, isolating the electrical equipment and the line or work site, as well as proving that the area is de-energised and earthed, issuing/accepting electrical permits and the returning of the affected circuits to service.
BSBCMN306A	Produce business documents	This unit covers the skills and knowledge required to produce various business documents. It includes the skills and knowledge required to select and use a range of functions on a computer application. This unit relates to BSBCMN213A Produce simple word processed documents and BSBCMN405A Analyse and present research information. Consider co-assessment with BSBCMN305A Organise workplace information.
BSBSBM405A	Monitor and manage business operations	This unit is concerned with the operation of the business and with implementing the business plan. The strategies involve monitoring, managing and reviewing operational procedures. It is suitable for existing micro and small businesses or a department in a larger organisation.
PMBQUAL390A	Solve problems using ‘quality tools’	This competency covers the solving of process and other problems, beyond those associated directly with the process unit, using a structured approach such as problem solving tools and techniques to achieve the organisation's quality objectives. The competency is typically performed by an experienced operator, leading hand or supervisor.

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Unit Code	Unit Title	Scope/Descriptor
BSBFLM503B	Manage effective workplace relationships	This unit replaces BSBFLM503A Establish effective workplace relationships. Frontline management plays an important role in developing and maintaining positive relationships in internal and external environments so that employees, customers, suppliers and the organisation achieve planned outputs/outcomes. At this level, work will normally be carried out within complex and diverse methods and procedures which require the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies. This unit builds on BSBFLM403B Implement effective workplace relationships. Consider co-assessment with BSBFLM512A Ensure team effectiveness
BSBFLM506B	Manage workplace information systems	This unit replaces BSBFLM506A Manage workplace information systems. The competency of frontline management in identifying, acquiring, analysing and using appropriate information plays a significant part in the organisation's effectiveness. At this level, work will normally be carried out within complex and diverse methods and procedures which require the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies. This unit builds on BSBFLM406B Implement workplace information system. Consider co-assessment with: BSBFLM505B Manage operational plan BSBFLM507B Manage quality customer service BSBMGT505A Ensure a safe workplace BSBFLM509B Promote continuous improvement, and BSBFLM512A Ensure team effectiveness.

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Unit Code	Unit Title	Scope/Descriptor
BSBFLM509B	Facilitate continuous improvement	This unit replaces BSBFLM509A Promote continuous improvement. Frontline managers have an active role in managing the continuous improvement process in achieving the organisation's objectives. Their position, closely associated with the creation and delivery of products and services, means that they play an important part in influencing the ongoing development of the organisation. At this level, work will normally be carried out within complex and diverse methods and procedures which require the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies. This unit builds on BSBFLM409A Implement continuous improvement. Consider co-assessment with: BSBFLM512B Ensure team effectiveness, BSBFLM505B Manage operational plan, BSBFLM507B Manage quality customer service, BSBMGT505A Ensure a safe workplace, BSBFLM510B Facilitate and capitalise on change and innovation, and BSBFLM511B Develop a workplace learning environment.
BSBFLM510B	Facilitate and capitalise on change and innovation	This unit replaces BSBFLM510A Facilitate and capitalise on change and innovation. Frontline management has an active role in fostering change and acting as a catalyst in the implementation of change and innovation. They have a creative role in ensuring that individuals, the team and the organisation gain from change; and that the customer benefits through improved products and services. At this level, work will normally be carried out within complex and diverse methods and procedures which require the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies. This unit builds on BSBCMN412A Promote innovation and change. Consider co-assessment with: BSBFLM512A Ensure team effectiveness, BSBFLM505B Manage operational plan, and BSBFLM509B Promote continuous improvement.

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Unit Code	Unit Title	Scope/Descriptor
BSBFLM512B	Ensure team effectiveness	This unit replaces BSBFLM502A Provide leadership in the workplace and BSBFLM504A Facilitate work teams, which have been combined to create this unit. Frontline management has an important facilitative role in the development and empowerment of work teams. This will be evident in the way Frontline managers work with teams and individuals, work across teams and the initiative they take in strengthening the links between teams and the organisations management. At this level, work will normally be carried out within complex and diverse methods and procedures which require the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies. This unit builds on BSBFLM412A Promote team effectiveness.
EPOPS234A	Perform Routine Oxyacetylene (Fuel Gas) Welding	This unit deals with the skills and knowledge required to be applied in a maintenance environment where welding is not required to meet Australian Standard 1554 general purpose or equivalent Codes and/or licensing requirements. This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.
UEPOPS235A	Perform Routine Manual Arc Welding	This unit deals with the skills and knowledge required to be applied in a maintenance environment where welding is not required to meet Australian Standard 1554 general purpose or equivalent Codes and/or licensing requirements. This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.
UEPOPS236A	Perform Manual Heating, Thermal Cutting and Gouging	This unit deals with the skills and knowledge required to be applied in a maintenance environment and would be used to facilitate a wide range of maintenance activities. This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

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Discipline M – Hazardous

Unit Code	Unit Title	Scope/Descriptor
UEENEEM001A	Report on the integrity of explosion-protected equipment in hazardous areas	This unit covers the explosion-protection aspects of plant and machinery operation and maintenance. It requires the ability to visually identify any damage or deterioration of explosion-protected equipment, monitor changes in the explosion hazard and to implement procedures established to limit the risk of an explosion.
UEENEEM002A	Attend to breakdowns in hazardous areas	This unit covers the explosion-protection aspects of attending to a breakdown in a hazardous area or of explosion-protected and associated equipment. It requires the ability to ascertain the nature of a breakdown, the extent of repairs required and the personnel needed to repair the breakdown.
UEENEEM003A	Use and maintain the integrity of portable gas detection devices	This unit covers the gas detection aspects of ensuring a work place is safe from explosive and toxic gases and vapours. It requires the ability to use measuring instruments accurately, follow written instructions and to write instructions for others.
UEENEEM004A	Install explosion-protected equipment and wiring systems	This unit covers the explosion-protection aspects for installing explosion-protected and associated equipment and wiring systems. It requires the ability to match equipment with that specified for a given location, work safely, and to installation standards and complete the necessary installation documentation.
UEENEEM005A	Install and maintain integrity of fixed gas detection equipment	This unit covers the installation, calibration and response checking of permanent gas detection equipment. It requires the ability to match equipment with that specified for a given location and to use manufacturer manuals to maintain accuracy of gas monitoring devices.
UEENEEM006B	Maintain equipment in hazardous areas	This unit covers the explosion-protection aspects for maintaining explosion-protected and associated equipment and wiring systems. It requires the ability to follow a maintenance program, work safely, carry out maintenance to standards and manufacturer instruction and complete the necessary maintenance documentation.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEM007A	Overhaul and repair explosion-protected equipment	This unit covers the explosion-protection aspects of overhauling and repairing explosion-protected equipment. It requires the ability to establish and document the level of work required, arranging for the overhaul/repair to be carried, verify compliance of overhauled/repaired equipment and complete the necessary documentation.
UEENEEM008A	Assess explosion-protected equipment for compliance with Standards	This unit covers the explosion-protection aspects of assessing compliance of electrical equipment. It requires the ability to assess and to report on the integrity of equipment, gather assessment and test documentation from accredited testing stations and prepares submissions to accredited certification bodies.
UEENEEM009A	Test installations in hazardous areas	This unit covers the explosion-protection aspects for electrical installations for hazardous areas. It requires the ability to select, prepare and use appropriate testing devices, work safely and to standards and to interpret and record test results.
UEENEEM010A	Conduct close inspection of existing hazardous areas installations	This unit covers the explosion-protection aspects for conducting visual and close inspections of electrical installations for hazardous areas. It requires the ability to follow inspection programs, work safely, and identify conditions that affect the integrity of explosion-protection and document inspection findings.
UEENEEM011A	Conduct detailed inspection of hazardous areas installations	This unit covers the explosion-protection aspects of conducting initial, periodic and sample audit inspections of explosion-protected equipment and installations. It requires the ability to audit a site dossier, work safely in a hazardous area, inspect against standards and report and act on inspection results. **Note**: *1. This unit is endorsed for each of the explosion-protection techniques in which competency is demonstrated. Designation for each endorsement is given in Clause 5 Range Statement in this unit.* *2. This unit is equivalent to 'UTENES410B Conduct detailed inspection of hazardous areas installations.*

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Unit Code	Unit Title	Scope/Descriptor
UEENEEM012A	Develop and manage maintenance programs for hazardous areas electrical equipment	This unit covers the explosion-protection aspects of plant maintenance schemes. It requires the ability to develop and manage maintenance programs incorporating strategies for periodic inspections, repair/overhaul/replacement of components and recording of maintenance outcomes.
UEENEEM013A	Ensure the safety of hazardous areas	This unit covers the explosion-protection aspects of ensuring that potentially explosive atmospheres, generated by production, processing or servicing activities, do not pose a hazard to persons, property or the environment.
UEENEEM014A	Design and develop modifications to explosion-protected equipment	This unit covers the explosion-protection aspects of designing and developing modifications to explosion-protected equipment. It requires the abilities in technical design and compliance assessments and documentation.
UEENEEM015A	Classify hazardous areas	This unit covers knowledge and skills to classify areas where potentially explosive materials may exist. It requires the ability to gather and analyse data relative to explosion hazards, determine the extent of risk and establish and document zones delineating the levels of risk.
UEENEEM016A	Design electrical installations in hazardous areas	This unit covers the explosion-protection aspects planning electrical installations for hazardous areas. It requires the ability to identify hazardous area zones from classification diagrams, identical examples of previously classified areas or those given in standards and to select and locate explosion-protected equipment and wiring systems and other items that may influence the explosion-protection technique.
UEENEEM017A	Design explosion-protected electrical systems	This unit covers the explosion-protection aspects of design electrical systems. It requires the ability to establish design briefs and to pursue economical and effective design solutions.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEM018A	Design gas detection systems	This unit covers the selection aspects of gas detection equipment for the design of gas detection systems for hazardous areas. It requires the ability to establish equipment parameters and to evaluate these against manufacturer's specifications.

Discipline N – Rail

Unit Code	Unit Title	Scope/Descriptor
UEENEEN001A	Service mechanical signalling equipment and infrastructure	This unit covers servicing and cleaning of mechanical signalling and infrastructure. It encompasses safe working, regulatory requirements, following cleaning and servicing work procedures, checking operation and functionality of signalling equipment and infrastructure, and reporting.
UEENEEN002A	Assemble and wire internal electrical signalling equipment	This unit covers assembly and wiring internal signalling equipment. It encompasses safe working, regulatory requirements and following work procedures assembling and mounting components, performing internal wiring, terminating cables, and wiring and testing to confirm system integrity.
UEENEEN003A	Install and maintain track circuit leads and bonds	This unit covers insulation of track circuit leads and bonds. It encompasses safe working, regulatory requirements and following work procedures, job planning, running and positioning, connecting track leads and bonds, maintaining and testing track leads and bonds and completing required documentation.
UEENEEN004A	Perform cable tests	This unit covers testing of signal and communication cables. It encompasses safe working, regulatory requirements and following work procedures determining the tools required setting up and conducting test, interpreting test results, determining activities to maintain system integrity and reporting activities.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEN005A	Install and maintain signalling power supplies	This unit covers installation and maintenance of signalling power supplies. It encompasses working safely and to installation/maintenance standards, matching equipment with that specified for a given location, terminating cables and connecting wiring, compliance and functional testing and completing the necessary installation documentation.
UEENEEN006A	Maintain remote control and non-vital interlocking control systems	This unit covers maintenance and repair of remote and non-vital interlocking control systems on rail networks. It encompasses safe working, regulatory requirements and following work procedures performing scheduled maintenance, finding and repairing faults, testing control and indicating equipment and reporting.
UEENEEN007A	Maintain power signalling and protected level crossing equipment	This unit covers maintenance and repairing faults in power signalling and level crossing equipment on rail networks. It encompasses safe working, regulatory requirements and following work procedures, performing schedules maintenance findings and repairing faults, performing operational tests and reporting.
UEENEEN008A	Maintain on-site power operated point-activating devices	This unit covers on-site maintenance of power point activating devices in rail networks. It encompasses safe working, regulatory requirements and following work procedures performing scheduled maintenance, repairing point activity devices, testing, verifying integrity of the maintenance work and reporting.
UEENEEN009A	Maintain track circuit equipment	This unit covers maintenance, fault finding and repair or track circuit equipment in a rail network. It encompasses safe working, regulatory requirements and following work procedures, performing maintenance finding, finding and repairing faults, adjusting and testing to verify operational integrity and reporting.
UEENEEN010A	Maintain electronic signalling and communication equipment	This unit covers maintain and repair faults electronic signalling and communications systems in a rail network. It encompasses safe working, regulatory requirements and following work procedures diagnosing and rectifying system faults, repairing and replacing faulty equipment, calibrating and testing and report work activities.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEN011A	Install and maintain power operated signalling equipment	This unit covers installation and maintenance of power operated signalling equipment. It encompasses safe working, regulatory requirements and following work procedures, assembling signal control equipment, installing equipment, components, wiring, connecting and checking and testing.
UEENEEN012A	Maintain power signalling and protective relay interlocking systems	This unit covers maintenance and repair of power signalling and protective relay interlocking systems in a rail network. It encompasses safe working, regulatory requirements and following work procedures, performing schedules maintenance, diagnosing and repairing system faults, performing operational tests and reporting.
UEENEEN013A	Install and test computer based interlocking equipment	This unit covers installation and testing of computer based interlocking equipment for rail network signalling. It encompasses safe working, regulatory requirements and following installation specifications, installing computer equipment, associated electronic equipment and track side interfaces, pre-commissioning activities, operational testing and reporting.
UEENEEN014A	Maintain computer based and solid state interlocking systems	This unit covers maintenance and repair of faults in computer based electronic equipment for rail network signalling system. It encompasses safe working, regulatory requirements and following work procedures monitoring system, responding to fault information, and replacing faulty equipment.
UEENEEN015A	Conduct routine inspecting and testing of new signal cables and lines	This unit covers testing or newly installed signal and power cables for a rail network signalling system. It encompasses safe working, regulatory requirements and following work procedures, visual inspection, cable testing, rectifying defects and verifying and certifying integrity of cables.
UEENEEN016A	Maintain electronic switched and microprocessor-based remote control systems	This unit covers maintain operational status of electronic switched microprocessor based remote control system for a rail network signalling system. It encompasses safe working, regulatory requirements and following work procedures, including co-ordinating and fault finding and repairs, inspecting and rectifying defects, analysing and determining the cause of faults, rectifying faults and recording.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEN017A	Install and maintain transmission interface equipment	This unit covers installing and maintaining transmission interface equipment for a rail network system. It encompasses safe working, regulatory requirements and following work procedures, scheduled maintenance, equipment installation and testing, diagnosing and rectifying faults and reporting.
UEENEEN018A	Find and repair wiring system faults	This unit covers finding and repairing faults with signal, data, and power wiring systems. It encompasses safe working, regulatory requirements and following work procedures, predicting likely wiring system faults, using appropriate fault finding techniques, repairing or rectifying faults and reporting.
UEENEEN019A	Test equipment and isolate faults	This unit covers the testing and isolation of signalling equipment and infrastructure. It encompasses safe working, regulatory requirements, work procedures, checking of operational and functional capabilities and the isolation of signalling equipment and infrastructure and reporting.
UEENEEN020A	Install electrical power and control equipment for rail networks	This unit covers installation of electrical power and control equipment. It encompasses working safely and to installation/maintenance standards, matching equipment with that specified for a given location, terminating cables and connecting wiring, compliance and functional testing and completing the necessary installation documentation.
UEENEEN021A to UEENEEN024A	RESERVED	
UEENEEN025A	Coordinate and manage track protection	This unit covers the coordination and management of track protection. It encompasses safe working, regulatory requirements and work procedures, including planning, establishing, monitoring and withdrawing track protection, and documentation
UEENEEN026A	Develop rail signalling maintenance programs	This unit covers the development of programs for the maintenance of rail signalling equipment and infrastructure. It encompasses safe working, regulatory requirements, work procedures including identifying tasks and work responsibilities and reporting.

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Unit Code	Unit Title	Scope/Descriptor
UEENEEN027A	Decommission electrical and electro-mechanical signalling from service	This unit covers the de-commissioning of electrical and electro-mechanical signalling systems from service on rail networks. It encompasses safe working, regulatory requirement work procedures, disconnection of operating and redundant circuitry, equipment and components, testing of remaining circuitry and equipment, finding and repairing faults, testing of control and indicating equipment and reporting.
UEENEEN028A	Test and commission power signalling equipment	This unit covers the testing and commissioning of power signalling equipment into service on rail networks. It encompasses safe working, regulatory requirement work procedures, connection of wiring circuitry, equipment and components, testing of wiring circuitry, equipment and components, finding and repairing faults, testing of control and indicating equipment and reporting.

Discipline P – Restricted

Unit Code	Unit Title	Scope/Descriptor
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply	This unit covers disconnecting and reconnecting fixed wired electrical equipment. This may be incidental to or a primary and regular function of work related to a principle work function. It encompasses working safely, identifying supply arrangements, following isolation procedures, selecting and using testing and measuring devices, terminating and connecting cables and conductors, safely testing and reporting and excludes disconnecting or reconnecting circuits at a switchboard or to general electrical accessories (including switches, socket outlets, circuit protective devices etc); or installation of or alteration to any part of the fixed electrical wiring system (defined as electrical installing work).

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Unit Code	Unit Title	Scope/Descriptor
UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply	This unit covers attaching flexible cords and plugs to electrical equipment for connection to supplies up to 250V a.c . This may be incidental to or a primary and regular function of work related to a principle function in the workplace. It encompasses working safely, identifying plug configurations, selecting and using testing and measuring devices, terminating and connecting cords/plugs and conductors, safety testing and reporting.
UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply	This unit covers attaching flexible cords/cables and plugs to electrical equipment connected to a supply up to 1000V a.c. or 1500V d.c. This may be incidental to or a primary and regular function of work related to a principle function in the workplace. It encompasses working safely, identifying plug configurations, selecting and using testing and measuring devices, terminating and connecting flexible cords/plugs and conductors, safety testing and reporting.
UEENEEP004A	Disconnect and reconnect explosion-protected electrical equipment connected to Low Voltage supply	This unit covers isolating, disconnecting and reconnecting flame proof, increased safety and intrinsic safety electrical equipment to supply up to 1000V a.c. or 1500V d.c. under restrictions of designated electrical equipment and conditions specified. It encompasses working safely in hazardous area, identifying supply arrangements, following isolation procedures, handling explosion-protection equipment, selecting and using testing and measuring devices, terminating and connecting cables and conductors, safety testing and reporting.
UEENEEP005A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles	This unit covers isolating, disconnecting and reconnecting HV electric propulsion components on engine driven, self-propelled earth moving vehicles under the restrictions of designated electrical equipment and conditions specified, operating at 3300 volts. It encompasses working safely, identifying circuit and isolation arrangements, following isolation procedures, selecting and using HV testing and measuring devices, terminating and connecting HV cables and conductors, safety testing and reporting

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Unit Code	Unit Title	Scope/Descriptor
UEENEEP006A	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply	This unit covers the attaching of flexible cable(s) and plug(s), including trailing and feeder cables, to high voltage electrical equipment connected to a supply exceeding 1000 volts a.c. or 1500 volts d.c. This may be incidental to or a primary and regular function of work related to a principle function in the workplace – typically mining. It encompasses working safely, identifying plug configurations, selecting and using testing and measuring devices, terminating and connecting HV flexible cables, plugs and conductors, safety testing and reporting.
UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures	This unit covers locating and rectifying fault(s) in electrical equipment intended to operate to a connected supply up to 1,000 volts a.c. or 1,500 volts d.c. This may be incidental to or a primary and regular function in the workplace. It encompasses following prescribed procedures, working safely, reading circuit diagrams, isolation procedures, identifying faults according to procedures, identifying like for like replacement/repair components according to procedures, selecting and using testing and measuring devices, terminating and connecting cables and conductors, safety testing and reporting.
UEENEEP008A	Conduct in-service safety testing of electrical cord assemblies and cord connected equipment	This unit covers safety testing of electrical cord assemblies and cord connected equipment. It encompasses working safely, using portable apparatus tester, identifying faults, applying tagging, arranging for repair of faulty equipment and complete testing documentation.

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Discipline R – Research

Unit Code	Unit Title	Scope/Descriptor
UEENEER001A	Contribute to the planning of a research project	This unit covers the ability to gather background information relevant to a research project, understand the context of the research project and contribute to the development of a research plan to achieve quality outcomes.
UEENEER002A	Contribute to the conduct of a research project	This unit covers the ability to identify information sources and collect and analyse information in accordance with confirmed research project objectives and compile and present results in accordance with current business practices
UEENEER003A	Contribute to the development of a product/application/ service	This unit covers the ability to assist managers to plan, coordinate and report on the development of a product/application/service.
UEENEER004A	Contribute to the trial of a product/application/ service	This unit covers the ability to assist managers plan, coordinate and report on a product/application/service trial.
UEENEER005A	Contribute to intellectual property management	This unit covers the ability to assist in the planning, management and protection of an organisation's Intellectual Property.
UEENEER006A	Contribute to the commercialisation of products/applications/ services	This unit covers the ability to assist managers to identify and investigate opportunities for commercialisation within the organisation, to commercialise a product, application or service and to critically assess the commercialisation process.

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1.2.8 Unit relationships

Included in this section is a summary of

- a list of the revised Electrotechnology competency standard units in this Training Package
- AQF alignment and strand unit total of each competency standard unit
- qualifications in which the CSUs reside
- prerequisite requirements.

Prerequisites of each competency standard unit are in Table 2 below. The correlation of the units within a qualification(s) are in flowcharts diagrams in Volume 1 Part 1 Qualification Framework

The units in Table 2 are listed in alphabetical and discipline order and include level, strand, qualifications and schedules.

Table 2 Index of Competency Standard Units

Note:
1. The following is a summary. The relevant parts of Volumes 1 and 2 should be consulted for detailed information of prerequisites and qualification completion requirements.

2. The competency standard unit and its place within a qualification structure (detailed under **Qualification and Schedule)** is defined by the following:

- use of the AQF number means the unit is a core

- use of the schedule number means it is an elective.

3. A unit may reside in the core of a qualification and in one or more Schedules of Electives. There is six schedules of Electives.

4. The term ‘Maintain’ or ‘Maintenance’ is used broadly to mean “to ensure continued safe and function operation …” which encompasses attending to breakdowns, serving, fault finding/diagnosis and formal maintenance. Competency in relation to formal (periodic and scheduled) maintenance is covered in the UEE06 version of the Training Package by Unit UEENEEE009A Comply with scheduled and preventative maintenance program processes.

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A – Assembly units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualification and Schedule
UEENEEA001A	Assemble electronic apparatus	2	2	None	UEE 2 09 06; S2
UEENEEA002A	Select electronic components	2/3	1	None	UEE 2 09 06; S2; S3
UEENEEA003A	Set up and check electronic component placement machines	2/3	2	A001A; A002A	S2; S3
UEENEEA004A	Rework electronic sub assemblies	2/3	2	A001A; A002A; E002A; E003A;	UEE 2 09 06; S2; S3
UEENEEA005A	Conduct functional and quality tests on assembled electronic apparatus	2/3	1	A004A;	UEE 2 09 06; S2; S3
UEENEEA006A	Apply lead-free soldering techniques	2/3	2	None	S2; S3
UEENEEA007A to UEENEEA009A	RESERVED				
UEENEEA010A	Assemble, mount and connect switchgear and controlgear	3	6	E002A; E005A; E007A;	UEE 3 07 06; S3; S4
UEENEEA011A	RESERVED				
UEENEEA012A	Make up and assemble bus bars	3	3	E002A; E005A; E007A;	UEE 3 07 06; S3
UEENEEA013A	Assemble and wire control panels	3	3	E002A; E005A; E007A;	UEE 3 07 06; S3

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B – Broadcast technology units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEB001A	Operate and maintain an amateur radio communication station	1/2	2	None	S1; S2

C – Commercial units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEC001A	Maintain documentation	2	SC	None	UEE 1 01 06; UEE 2 01 06; UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 14 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 2 18 06; UEE 2 19 06; UEE 2 20 06; UEE 2 21 06; UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 02 06; UEE 4 03 06; UEE 4 04 06; UEE 4 05 06; UEE 4 06 06; UEE 4 07 06; UEE 4 08 06; UEE 4 09 06; UEE 4 10 06; UEE 4 11 06; UEE 4 12 06; UEE 4 13 06; UEE 4 14 06; UEE 4 15 06; UEE 4 16 06; UEE 4 17 06; UEE 4 18 06; UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06;
UEENEEC002A	Source and purchase material/parts for installation or service jobs	3	SC	Core units in a qualification	UEE 1 01 06; UEE 2 01 06; UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 14 06; UEE 2 16 06; UEE 2 17 06; UEE 2 18 06; UEE 2 19 06; UEE 3 01 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 02 06; UEE 4 03 06; UEE 4 04 06; UEE 4 05 06; UEE 4 06 06; UEE 4 07 06; UEE 4 08 06; UEE 4 09 06; UEE 4 10 06; UEE 4 11 06; UEE 4 12 06; UEE 4 13 06; UEE 4 14 06; UEE 4 15 06; UEE 4 16 06; UEE 4 17 06; UEE 4 18 06; UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06;
UEENEEC003A	Provide quotations for installation or service jobs	3	SC	Core units in a qualification	UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 02 06; UEE 4 03 06; UEE 4 04 06; UEE 4 05 06; UEE 4 06 06; UEE 4 07 06; UEE 4 08 06; UEE 4 09 06; UEE 4 10 06; UEE 4 11 06; UEE 4 12 06; UEE 4 13 06; UEE 4 14 06; UEE 4 15 06; UEE 4 16 06; UEE 4 17 06; UEE 4 18 06; UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06;
UEENEEC004A	Prepare specifications for the supply of materials and equipment for electrotechnology projects	4	2	Core units in a qualification	S4
UEENEEC005A	Estimate electrotechnology projects	4	2	Core units in a qualification	S4
UEENEEC006A	Prepare tender submissions for electrotechnology	5	3	C005A	S5

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	projects				
UEENEEC007A	Manage contract variations	6	3	Core units in a qualification	S6
UEENEEC008A	Receive and store materials and equipment for electrotechnology work	2	SC	None	UEE 1 01 06; UEE 2 01 06; UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 14 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 2 18 06; UEE 2 19 06;
UEENEEC009A	Provide quotations for inspection and compliance audit services	4	SC	Core units in a qualification	
UEENEEC010A	Deliver a service to customers	2	SC	None	UEE 1 01 06; UEE 2 01 06; UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 14 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 2 18 06; UEE 2 19 06; UEE 2 20 06; UEE 2 21 06; UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 02 06; UEE 4 03 06; UEE 4 04 06; UEE 4 05 06; UEE 4 06 06; UEE 4 07 06; UEE 4 08 06; UEE 4 09 06; UEE 4 10 06; UEE 4 11 06; UEE 4 12 06; UEE 4 13 06; UEE 4 14 06; UEE 4 15 06; UEE 4 16 06; UEE 4 17 06; UEE 4 18 06; UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06;
UEENEEC011A	RESERVED				
UEENEEC012A	Direct technical and non-technical enquiries to appropriate personnel	2	SC	None	

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEC013A	Participate in business equipment work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 01 06
UEENEEC014A	Participate in computer equipment work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 02 06
UEENEEC015A	Participate in custom electronic installations work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 03 06
UEENEEC016A	Participate in voice and data communications work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 04 06
UEENEEC017A	Participate in appliance servicing work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification; J061A	UEE 3 05 06
UEENEEC018A	Participate in electrical machine repair work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated	UEE 3 06 06

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
				elective units in a qualification.	
UEENEEC019A	Participate in switchgear and controlgear work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 07 06
UEENEEC020A	Participate in electrical work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification; G005A	UEE 3 08 06
UEENEEC021A	Participate in electronics and communications work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 09 06
UEENEEC022A	Participate in fire protection control work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 10 06
UEENEEC023A	Participate in gaming electronic work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 11 06
UEENEEC024A	Participate in instrumentation and control work and	3	5	Competency in this unit	UEE 3 12 06

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	competency development activities			shall be assessed with core and nominated elective units in a qualification; I012A	
UEENEEC025A	Participate in refrigeration and air conditioning work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification; J009A	UEE 3 13 06
UEENEEC026A	Participate in security equipment work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 14 06
UEENEEC027A	Participate in rail communications and networks work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 15 06
UEENEEC028A	Participate in hazardous areas work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a qualification.	UEE 3 18 06; UEE 3 17 06
UEENEEC029A	Participate in explosion-protected equipment overhaul work and competency development activities	3	5	Competency in this unit shall be assessed with core and nominated elective units in a	UEE 3 19 06

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
				qualification.	

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D – Computerised systems units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEED001A	Use basic computer applications relevant to a workplace	1 Core/ 2 S/Core	Core/S C	None	UEE 1 01 06; UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 14 06; UEE 2 15 06; UEE 2 16 06; UEE 2 20 06; UEE 2 21 06; UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 02 06; UEE 4 03 06; UEE 4 04 06; UEE 4 05 06; UEE 4 06 06; UEE 4 07 06; UEE 4 08 06; UEE 4 09 06; UEE 4 10 06; UEE 4 11 06; UEE 4 12 06; UEE 4 13 06; UEE 4 14 06; UEE 4 15 06; UEE 4 16 06; UEE 4 17 06; UEE 4 18 06; UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06;
UEENEED002A	Assemble, set up and test personal computers	2	4	E002A; E007A;	UEE 2 05 06; UEE 3 02 06; UEE 4 01 06; UEE 5 01 06; UEE 6 03 06; UEE 6 04 06; UEE 6 05 06; UEE 6 10 06; S2
UEENEED003A	Evaluate and modify programs written in object oriented code	4/5	2	D001A	S4; S5
UEENEED004A	Use engineering applications software	3/4	3	None	UEE 6 03 06; UEE 6 05 06; S3; S4
UEENEED005A	Enter and verify operating instructions in microprocessor equipped devices	2	1	None	UEE 2 10 06; UEE 2 16 06; UEE 3 07 06; UEE 3 10 06; S2
UEENEED006A	RESERVED				
UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set	3/4	3	Competency in this unit shall be granted only after all relevant competency standard units at AQF level 3 have been achieved.	UEE 3 07 06; UEE 3 12 06; UEE 3 18 06; S3; S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEED008A	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems	4/5	3	D009A;	S4; S5
UEENEED009A	Develop, enter and verify programs for industrial control systems using high level instructions	4/5	3	D007A;	S4; S5
UEENEED010A	Set up and create content for a web server	5	6	None	S5
UEENEED011A	Create object oriented code	5	7	D003A;	S5
UEENEED012A	Support computers hardware and software	3/4	6	D002A;	UEE 3 02 06; UEE 4 01 06; UEE 5 01 06; UEE 6 04 06; UEE 6 05 06; S3; S4
UEENEED013A	Install and administer Unix based computers	4	4	None	S4
UEENEED014A	Design and manage enterprise networks	6	4	D016A;	S6
UEENEED015A	Administer user networks	4	4	D024A;	S4
UEENEED016A	Develop network services	5/6	6	D015A;	S5; S6
UEENEED017A	Install and configure Internetworking systems	4	6	None	UEE 6 03 06; UEE 6 05 06; S4
UEENEED018A	Design and implement Internetworking systems	5/6	8	D017A;	S5; S6
UEENEED019A	Design and implement Internetworking systems — advanced routing	5/6	5	D018A;	S5; S6
UEENEED020A	Design and implement Internetworking systems — remote access	6	5	D018A;	S6
UEENEED021A	Design and implement Internetworking systems — multi-layer switching	6	5	D018A;	S6

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEED022A	Design and implement Internetworking systems — security	6	5	D018A;	S6
UEENEED023A	Design and implement Internetworking systems — wireless LANs/WANs	6	5	D018A;	S6
UEENEED024A	Integrate multiple computer operating systems on a client server network	4	6	D012A;	S4
UEENEED025A	Design and configure Human-Machine Interface networks	5/6	3	D008A;	S5; S6
UEENEED026A	Design a computer based control system	6	6	D025A;	S6
UEENEED027A	Develop structured programs for control sub systems to access external devices	3/4	3	None	UEE 6 03 06; S3; S4
UEENEED028A	Develop and test basic specification for micro-controller equipped devices	5/6	3	None	UEE 6 03 06; UEE 6 05 06; S5; S6
UEENEED029A	Develop basic web pages for engineering applications	3	2	Supported by other units relevant to electrical/electronic/control engineering and technology.	S3
UEENEED030A	Select, install, configure and test multimedia devices	3/4	2	D002A;	S3; S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEED031A	Develop and validate basic integrated systems	3/4	3	Competency in this unit shall be assessed only after the technical units in a qualification have been achieved.	UEE 3 03 06; S3; S4
UEENEED032A	Design integrated systems	4	3	D031A;	S4
UEENEED033A	Design complex integrated systems	4/5	3	D032A;	S4; S5
UEENEED034A	Configure and maintain industrial control system networks	4/5	3	D015A;	S4; S5
UEENEED035A to UEENEED042A	RESERVED				
UEENEED043A	Install and configure a computer operating system and software	3	3	None	UEE 3 02 06; UEE 4 01 06; UEE 5 01 06; UEE 6 04 06; S3
UEENEED044A	RESERVED				
UEENEED045A	RESERVED				
UEENEED046A	Set up and configure basic local area network	2/3	3	D002A;	S2; S3
UEENEED047A	Manage computer projects	6	2	Competency in this unit shall be assessed only after the technical units in a qualification have been achieved.	UEE 6 04 06; S6

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEED048A	Plan computer systems projects	6	3	Competency in this unit shall be assessed only after the technical units in a qualification have been achieved.	UEE 6 04 06; S6
UEENEED049A	RESERVED				
UEENEED050A	Develop control programs for micro-computer equipped devices	5/6	3	D028A;	S5; S6
UEENEED051A	Provide programming solution for engineering problems	5/6	6	H012A;	S5; S6
UEENEED052A	Design embedded controller systems	5/6	6	D027A; D028A; E027A	S5; S6
UEENEED053A	Set up and test biometric devices	3/4	2	D046A;	S3; S4
UEENEED054A	Analyse and implement biometric techniques and applications	4/5	6	D053A	S4; S5
UEENEED055A	Develop and validate biometric systems installation instructions	5/6	6	None	S5; S6

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E – Cross-discipline units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEE001A	Apply OHS practices in the workplace	1/2	1	None	UEE 1 01 06: UEE 2 01 06; UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 14 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 2 18 06; UEE 2 19 06; UEE 2 20 04, UEE 2 21 06; UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 01 06; UEE 5 05 06; UEE 6 02 06; UEE 6 03 06; UEE 6 04 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 6 11 06; S2
UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components	1/2	2	None	UEE 2 01 06; UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 14 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 2 18 06; UEE 2 19 06; UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 01 06; UEE 5 05 06; UEE 6 02 06; UEE 6 03 06; UEE 6 04 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06; S1; S2
UEENEEE003A	Solve problems in extra-low voltage single path	1/2	2	None	UEE 2 02 06; UEE 2 04 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	circuits				UEE 2 05 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 14 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 2 19 06; UEE 2 20 04, UEE 2 21 06; UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 01 06; UEE 5 05 06; UEE 6 02 06; UEE 6 04 06; S1; S2
UEENEEE004A	Solve problems in multiple path d.c. circuits	1/2	2	E003A;	UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 07 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 2 19 06; UEE 2 20 04,

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 2 21 06; UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 01 06; UEE 5 05 06; UEE 6 02 06; UEE 6 04 06; S1; S2
UEENEEE005A	Fix and secure equipment	1/2/3	1	None	UEE 2 01 06; UEE 2 06 06; UEE 2 07 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 3 01 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 07 06; UEE 4 15 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 5 05 06; S1; S2; S3
UEENEEE006A	Apply methods to maintain currency of industry developments	CSU SoA	SC	None	
UEENEEE007A	Use drawings, diagrams, schedules and manuals	2	2	None	UEE 2 01 06; UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 2 18 06; UEE 2 19 06; UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 01 06; UEE 5 05 06; UEE 6 02 06; UEE 6 03 06; UEE 6 04 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					S2
UEENEEE008A	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	2	2	E002A; E005A; E007A;	UEE 2 06 06; UEE 2 07 06; UEE 2 10 06; UEE 2 12 06; UEE 2 13 06; UEE 2 15 06; UEE 2 16 06; UEE 3 03 06; UEE 3 04 06; UEE 3 08 06; UEE 3 10 06; UEE 3 14 06; UEE 3 17 06; S2
UEENEEE009A	Comply with scheduled and preventative maintenance program processes	3	SC	Competency in this unit shall be assessed only after all core units have been achieved in the electrotechnology discipline qualification in which competency in the unit is sought.	UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 02 06; UEE 4 03 06; UEE 4 04 06; UEE 4 05 06; UEE 4 06 06; UEE 4 07 06; UEE 4 08 06; UEE 4 09 06; UEE 4 10 06; UEE 4 11 06; UEE 4 12 06; UEE 4 13 06; UEE 4 14 06; UEE 4 15 06; UEE 4 16 06; UEE 4 17 06; UEE 4 18 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06;
UEENEEE010A	Develop and implement maintenance programs	4/5	3	Additional to core units in a qualification	S4; S5
UEENEEE011A	Manage risk in electrotechnology activities	6	5	Technical units in a qualification	UEE 6 01 06; UEE 6 02 06; UEE 6 04 06; UEE 6 06 06; UEE 6 07 06; UEE 6 09 06; UEE 6 11 06; S6
UEENEEE012A	Manage electrotechnology projects	6	2	Technical units in a qualification	S6
UEENEEE013A	Plan electrotechnology projects	6	3	Technical units in a qualification	S6
UEENEEE014A	Supervise and coordinate work activities	4	2	Technical units in a qualification	S4
UEENEEE015A	Develop design briefs for electrotechnology projects	5/6	2	Core units	S5; S6
UEENEEE016A	Write specifications for electrotechnology projects	5	2	Technical units in a qualification	S5
UEENEEE017A	Implement and monitor OHS policies and procedures	4	1/ Core units in a	None	UEE 4 01 06; UEE 4 02 06; UEE 4 03 06; UEE 4 04 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
			qualification		UEE 4 05 06; UEE 4 06 06; UEE 4 07 06; UEE 4 08 06; UEE 4 09 06; UEE 4 10 06; UEE 4 11 06; UEE 4 12 06; UEE 4 13 06; UEE 4 14 06; UEE 4 15 06; UEE 4 16 06; UEE 4 17 06; UEE 4 18 06; UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 09 06; UEE 6 01 06; UEE 6 02 06; UEE 6 04 06; UEE 6 06 06; UEE 6 07 06; UEE 6 09 06; UEE 6 11 06; UEE 6 12 06; S4
UEENEEE018A	Establish, maintain and evaluate OHS systems	4/5	3	None	S4; S5
UEENEEE019A	Solve problems in multiple path a.c. circuits	3	2	E004A;	UEE 3 03 06; UEE 3 04 06; UEE 3 10 06; UEE 3 14 06; UEE 3 15 06; UEE 3 19 06; UEE 4 17 06; S3
UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus	1/2	SC/1	None	UEE 2 02 06; UEE 2 04 06; UEE 2 05 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 11 06; UEE 2 12 06; UEE 2 13 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
					UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 2 18 06; UEE 2 19 06; UEE 3 01 06; UEE 3 02 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 09 06; UEE 3 10 06; UEE 3 11 06; UEE 3 12 06; UEE 3 13 06; UEE 3 14 06; UEE 3 15 06; UEE 3 17 06; UEE 3 18 06; UEE 3 19 06; UEE 4 01 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 01 06; UEE 5 05 06; UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06; S1
UEENEEE021A	Plan an integrated cabling system	3/4	2	E008A	S3; S4
UEENEEE022A	Carry out preparatory electrotechnology work activities	2	3	E002A; E005A;	UEE 2 17 06; S2
UEENEEE023A	Solve basic problems in electronic and digital equipment	2	4	None	UEE 6 04 06; S2
UEENEEE024A	Compile and produce an electrotechnology report	4/5	3	After all core units have been achieved in the electrotechnology	UEE 4 01 06; UEE 4 02 06; UEE 4 03 06; UEE 4 04 06; UEE 4 05 06; UEE 4 06 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
				discipline in which competency in the unit is sought.	UEE 4 07 06; UEE 4 08 06; UEE 4 09 06; UEE 4 10 06; UEE 4 11 06; UEE 4 12 06; UEE 4 13 06; UEE 4 14 06; UEE 4 15 06; UEE 4 16 06; UEE 4 17 06; UEE 4 18 06; UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 09 06; UEE 6 01 06; UEE 6 06 06; UEE 6 09 06; UEE 6 11 06; UEE 6 12 06;
UEENEEE025A	Solve problems in complex multiple path circuits	3	3	E026A AND H014A; OR E050A AND E029A	UEE 6 02 06; UEE 6 03 06; UEE 6 04 06; UEE 6 05 06; UEE 6 06 06; UEE 6 08 06; UEE 6 10 06; UEE 6 11 06; UEE 6 12 06; S6
UEENEEE026A	Provide computational solutions to basic engineering problems	3	3	None	UEE 6 02 06; UEE 6 04 06; UEE 6 06 06; UEE 6 11 06; UEE 6 12 06;S6
UEENEEE027A	Use advanced computational processes to provide solutions to engineering problems	6	6	E025A; E026A	S6
UEENEEE028A	Develop engineering solutions to photonic problems	6	4	E025A;	S6

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEE029A	Solve electrotechnical problems	6	3	None	UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06; S6
UEENEEE030A	Provide solutions to and report on routine electrotechnology problems	2	3	None	S2
UEENEEE031A	RESERVED				
UEENEEE032A	Document occupational hazards and risks in computer systems	2	1	In conjunction with other units in the qualification	UEE 2 05 06; UEE 3 02 06; UEE 4 01 06; UEE 5 01 06; UEE 6 04 06; UEE 6 05 06; S2
UEENEEE033A	Document occupational hazards and risks in electrical	2	1	In conjunction with other units in the qualification	UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 17 06; UEE 3 19 06; S2
UEENEEE034A	Document occupational hazards and risks in electronics	2	1	In conjunction with other units in the qualification	UEE 2 02 06; UEE 2 11 06; UEE 2 19 06; UEE 3 09 06; UEE 3 11 06; UEE 4 07 06; UEE 4 15 06; UEE 5 05 06; UEE 6 02 06; UEE 6 03 06; S2
UEENEEE035A	Document occupational hazards and risks in instrumentation	2	1	In conjunction with other units in the qualification	UEE 3 12 06;UEE 3 18 06; S2
UEENEEE036A	Document occupational hazards and risks in	2	1	In conjunction with other units in the	UEE 2 01 06; UEE 2 18 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	refrigeration and air-conditioning			qualification	UEE 3 13 06; S2
UEENEEE037A	Document occupational hazards and risks in electrotechnology	2	1	In conjunction with other units in the qualification	UEE 2 04 06; UEE 2 06 06; UEE 2 07 06; UEE 2 09 06; UEE 2 10 06; UEE 2 12 06; UEE 2 13 06; UEE 2 15 06; UEE 2 16 06; UEE 2 17 06; UEE 3 01 06; UEE 3 03 06; UEE 3 04 06; UEE 3 05 06; UEE 3 10 06; UEE 3 14 06; UEE 3 15 06; UEE 4 17 06; UEE 6 10 06; UEE 6 11 06; S2
UEENEEE038A	Participate in development and follow a personal competency development plan	2/6	N/A	None	All CI, CII, CIV, Diploma and Advanced Diploma Qualifications
UEENEEE039A	RESERVED				
UEENEEE040A	Identify and select components/accessories/materials for electrotechnology work activities	1/2	4	None	UEE 1 01 06: UEE 2 20 06: S2
UEENEEE041A	Use of routine equipment/plant/technologies in an electrotechnology environment	2	3	None	UEE 2 20 06: S2
UEENEEE042A	Produce routine products for carrying out electrotechnology work activities	2	6	None	S2

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEE043A	Produce routine tools/devices for carrying out electrotechnology work activities	1/2	6	None	S1; S2
UEENEEE044A	Apply technologies and concepts to electrotechnology work activities	2	6	None	S2
UEENEEE045A	Apply computation when using equipment, materials and concepts in an electrotechnology environment	1/2	8	None	S1; S2
UEENEEE046A	Identify affects of energy on machinery and materials in an electrotechnology environment	1/2	6	None	UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06; S1; S2
UEENEEE047A	Identify building techniques, methods and materials used in electrotechnology work activities	2	6	None	S2
UEENEEE048A	Carry out routine work activities in an electrotechnology environment	1/2	2	None	UEE 1 01 06: UEE 2 20 06; S2
UEENEEE049A	Contribute to the operation of support plant and equipment used in electricity supply	2	6	None	S2
UEENEEE050A	Undertake computations in an electrotechnology environment	2	6	None	UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06; S2
UEENEEE051A	Transport apparatus and materials	2	3	None	S2
UEENEEE052A to UEENEEE059A	RESERVED				

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEE060A	Provide solutions for uses of materials and thermodynamic effects	5/6	5	E001A; E002A; E007A;	S5; S6
UEENEEE061A	Analyse static and dynamic parameters of equipment	5/6	4	E001A; E002A; E007A;	S5; S6
UEENEEE062A	Select drive components for equipment design	5/6	4	E061A;	S5; S6
UEENEEE063A	Analyse materials for suitability in equipment	5/6	4	E061A;	S5; S6
UEENEEE064A	Design machine drives and production layout plans	5/6	4	E062A; E063A; E026A;	UEE 6 11 06; S5; S6
UEENEEE065A to UEENEEE069A	RESERVED				
UEENEEE070A	Write specifications for computer systems engineering projects	5/6	2	Competency in this unit should be assessed in conjunction with other technical units in a qualification.	UEE 5 01 06; UEE 6 04 06;
UEENEEE071A	Write specifications for electrical engineering projects	5/6	2	Competency in this unit should be assessed in conjunction with other technical units in a qualification.	UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 6 01 06; UEE 6 12 06;
UEENEEE072A	Write specifications for electronics and communications engineering projects	5/6	2	Competency in this unit should be assessed in conjunction with other technical units in a	UEE 5 05 06; UEE 6 02 06

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
				qualification.	
UEENEEE073A	Write specifications for refrigeration and air conditioning engineering projects	5/6	2	Competency in this unit should be assessed in conjunction with other technical units in a qualification.	UEE 5 03 06;
UEENEEE074A	Write specifications for renewable energy engineering projects	5/6	2	Competency in this unit should be assessed in conjunction with other technical units in a qualification.	UEE 6 09 06;
UEENEEE075A	Write specifications for industrial electronics and control projects	5/6	2	Competency in this unit should be assessed in conjunction with other technical units in a qualification.	UEE 5 02 06; UEE 5 09 06; UEE 6 06 06; UEE 6 12 06;
UEENEEE076A	RESERVED				
UEENEEE077A	Write specifications for automated systems projects	5/6	2	Competency in this unit should be assessed in conjunction with other technical units in a qualification.	UEE 6 11 06;

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F – Data and voice communication units

National Code	Title	AQ F	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEF001A	Lay and connect cabling for direct access to telecommunication services	2/3	1	E002A; F006A; E005A E007A;	S2; S3
UEENEEF002A	Lay and connect cables for multiple access to telecommunication services	2/3	6	E002A; E004A; E005A; E007A;	UEE 2 07 06; UEE 3 04 06; UEE 3 10 06; UEE 4 02 06; S2; S3
UEENEEF003A	Install and maintain cabling for telecommunication services in lifts	3/4	2	G016A	S4
UEENEEF004A	Install and modify performance data communication structured cabling	3/4	2	F002A	UEE 3 04 06; UEE 4 02 06; S3; S4
UEENEEF005A	Install and modify performance data communication optical fibre cabling	3/4	2	F002A	UEE 3 04 06; UEE 4 02 06; S3; S4
UEENEEF006A	Solve problems in data and voice communications circuits	2	2		S2
UEENEEF007A	Set up wireless capabilities of communications and data storage devices	2/3	2	None	S2; S3
UEENEEF008A	Select and arrange equipment for wireless networks	4	3	F007A;	S4
UEENEEF009A	Install and connect voice and data communications equipment	3/4	3	F004A; F005A	UEE 3 04 06; UEE 4 02 06; S3; S4
UEENEEF010A	Select and arrange equipment for local area networks	3/4	6	F004A	UEE 3 04 06; S3; S4
UEENEEF011A	Test, report and rectify faults in voice and data installations	3/4	3	F004A; F005A;	UEE 3 04 06; UEE 4 02 06; S3; S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEF012A	Install aerial communication cables	3/4	2	F002A;	S3; S4
UEENEEF013A	Install below ground communication cables	3/4	2	F002A;	S3; S4
UEENEEF014A	Set up and configure basic data communications systems	3/4	2	D002A	S3; S4
UEENEEF015A	Assemble and connect communication frames and cabinets	2	3	E002A; E005A; E007A;	UEE 3 07 06; S2

G – Electrical units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEG001A	Solve problems in electromagnetic circuits	3	Core only	E004A;	UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 17 06; UEE 3 19 06;
UEENEEG002A	Solve problems in single and three phase low voltage circuits	3	Core only	G001A;	UEE 3 06 06; UEE 3 07 06; UEE 3 08 06; UEE 3 17 06; UEE 3 19 06;
UEENEEG003A	Install wiring and accessories for low voltage circuits	3	Core only	E002A; E005A; E007A;	UEE 3 08 06; UEE 3 17 06;
UEENEEG004A	Install low voltage electrical apparatus and associated equipment	3	Core only	E002A; E005A; E007A;	UEE 3 08 06; UEE 3 17 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEG005A	Verify compliance and functionality of general electrical installations	3	Core only	E001A; E002A; E003A; E004A; E005A; E007A; E008A; E033A; G001A; G002A; G003A; G004A; G007A; G008A; G009A; and elective units as required, from Schedule 3 to a Strand Unit value of 6	UEE 3 08 06; UEE 3 17 06; UEE 4 02 06; UEE 4 03 06; UEE 4 04 06; UEE 4 05 06; UEE 4 06 06; UEE 4 08 06; UEE 4 09 06; UEE 4 11 06; UEE 4 12 06; UEE 4 16 06; UEE 4 18 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 07 06; UEE 5 09 06; UEE 6 01 06; UEE 6 06 06; UEE 6 09 06; UEE 6 12 06;
UEENEEG006A	RESERVED				
UEENEEG007A	Select and arrange equipment for general electrical installations	3/4	6	G002A;	UEE 3 08 06; UEE 3 17 06; S3; S4
UEENEEG008A	Find and repair faults in electrical apparatus and circuits	3	Core only	G002A; G003A; G004A;	UEE 3 08 06; UEE 3 17 06;
UEENEEG009A	Develop and connect control circuits	3	Core only	G002A; G003A; G004A;	UEE 3 08 06; UEE 3 17 06;
UEENEEG010A	Find and repair faults in d.c. electrical apparatus and circuits	3/4	3	G008A;	S3; S4
UEENEEG011A	Carry out basic repairs to electrical apparatus	2	2	E002A;	UEE 2 17 06; S2
UEENEEG012A	Solve fundamental problems in electrical systems	6	3	E025A;	UEE 6 03 06; UEE 6 05 06; UEE 6 08 06; UEE 6 10 06; S6

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEG013A	Install and maintain emergency systems.	3/4	3	G003A; G004A;	S3; S4
UEENEEG014A	Develop plans and compliance policies to conduct a contracting business	4	4	G005A; E018A;	S4
UEENEEG015A	Find and rectify faults in energy supply network equipment	3/4	6	G008A;	S3; S4
UEENEEG016A	Diagnose and rectify faults in lifts systems	3/4	4	G008A;	UEE 4 11 06; S3; S4
UEENEEG017A	Install electrical power and control equipment for rail network signalling	3/4	2	G003A;	S3; S4
UEENEEG018A	Maintain operation of electrical mining equipment	3/4	3	G002A; G008A; and, where applicable M002A and M006A;	S3; S4
UEENEEG019A	Maintain the operation of electrical marine equipment	3/4	3	G002A; G008A; and, where applicable M002A and M006A;	S3; S4
UEENEEG020A	Select and arrange equipment for special electrical installations	3/4	3	G007A;	S3; S4
UEENEEG021A	Verify compliance and functionality of special electrical installations	3/4	2	G005A; G020A;	S3; S4
UEENEEG022A	Conduct compliance inspection of single phase electrical installations	4	3	G005A;	UEE 4 03 06; S4
UEENEEG023A	Conduct compliance inspection of electrical installations with demand exceeding 100A per phase	4	2	G022A;	UEE 4 03 06; S4
UEENEEG024A	Conduct compliance inspection of special electrical	4	3	G021A; G023A;	S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	installations				
UEENEEG025A	Plan electrical installations with a LV demand up to 400A per phase	3/4	2	G007A;	S3; S4
UEENEEG026A	Install and maintain field power and distribution systems with a LV demand up to 200 A per phase	3/4	4	G007A; G008A;	S3; S4
UEENEEG027A	Design electrical installations with a LV demand greater than 400 A per phase	4/5	2	G025A;	S4; S5
UEENEEG028A	Plan switchboard and control panel layouts	3/4	2	G007A;	S3; S4
UEENEEG029A	Overhaul and repair switchgear/controlgear	3/4	3	G064A;	UEE 3 07 06; UEE 3 19 06; S3; S4
UEENEEG030A	Design switchboards rated for high fault levels	5/6	3	G028A; G049A;	S5; S6
UEENEEG031A	Evaluate performance of electrical apparatus	5	2	In conjunction with other relevant units in a qualification	S5
UEENEEG032A	Carry out electrical field testing and report findings	4/5	3	G005A;	S4; S5
UEENEEG033A	RESERVED				
UEENEEG034A	Perform high voltage field switching to a given schedule	3/4	2	G015A;	S3; S4
UEENEEG035A	Diagnose and rectify faults in a.c. motor drive systems	5/6	3	H026A;	S5; S6
UEENEEG036A	Diagnose and rectify faults in d.c. motor drive systems	5/6	3	H026A;	S5; S6

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEG037A	Diagnose and rectify faults in energy supply apparatus	4/5	3	G015A	S4; S5
UEENEEG038A	Diagnose and rectify faults in electrical energy distribution systems	4/5	3	G015A;	S4; S5
UEENEEG039A	Diagnose and rectify faults in distributed generation systems	4/5	3	G015A;	S4; S5
UEENEEG040A	Develop engineering solutions for energy supply power transformer problems	5/6	3	G038A; or G039A; or G042A and G049A	S5; S6
UEENEEG041A	Diagnose and rectify faults in servo drive systems	5/6	3	H026A;	S5; S6
UEENEEG042A	Diagnose and rectify faults in electrical energy supply transmission systems	4/5	3	G015A;	S4; S5
UEENEEG043A	Develop engineering solution for synchronous machine problems	5/6	3	G049A	S5; S6
UEENEEG044A	Develop engineering solutions for d.c. machine problems	5/6	3	G048A;	S5; S6
UEENEEG045A	Develop engineering solutions for induction motor problems	5/6	3	G049A;	S5; S6
UEENEEG046A	Develop engineering solutions for energy supply system protection problems	5/6	3	G038A; or G039A; or G042A; and G049A	S5; S6
UEENEEG047A	Provide computational solutions to power engineering problems	4/5	3	G002A	UEE 6 01 06; UEE 6 06 06; UEE 6 09 06; UEE 6 12 06; S4; S5
UEENEEG048A	Solve problems in complex multiple path power	4/5	3	G047A;	UEE 6 01 06; UEE 6 06 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	circuits				UEE 6 09 06; UEE 6 12 06; S4; S5
UEENEEG049A	Solve problems in complex polyphase power circuits	5/6	3	G048A	UEE 6 01 06; UEE 6 06 06; UEE 6 09 06; UEE 6 12 06; S5; S6
UEENEEG050A	Wind coils	2	2	E002A; E007A;	UEE 2 04 06; UEE 3 06 06; UEE 3 19 06; S2
UEENEEG051A	Place and connect coils	2	2	E004A; G050A;	UEE 2 04 06; UEE 3 06 06; UEE 3 19 06; S2
UEENEEG052A	Rewind single phase induction machines	2/3	6	G051A;	UEE 3 06 06; UEE 3 19 06; S2; S3
UEENEEG053A	Rewind three phase induction machines rated for low voltage	3	6	G052A;	UEE 3 06 06; UEE 3 19 06; S3
UEENEEG054A	Rewind direct current machines rated for low voltage	3	6	G052A;	S3
UEENEEG055A	Rewind three phase induction machines rated for high voltage to 3.3 kV	3/4	3	G053A;	S3; S4
UEENEEG056A	Rewind three phase induction machines rated for high voltage above 3.3 kV	3/4	3	G055A;	S3; S4
UEENEEG057A	Conduct electrical tests on low voltage electrical machines	3/4	2	G053A; OR G008A	UEE 3 06 06; UEE 3 19 06; S3; S4
UEENEEG058A	Conduct electrical tests on high voltage electrical machines	3/4	3	G057A;	S3; S4
UEENEEG059A	Conduct mechanical tests of electrical machines	3/4	2	G057A;	S3; S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEG060A	Evaluate performance of electrical machines	4/5	2	G057A; AND (G043A; OR G044A; OR G045A)	S4; S5
UEENEEG061A	Design and develop modifications to electrical machines	5/6	3	G060A;	S5; S6
UEENEEG062A	Set up and place electrical apparatus and associated circuits into service	3/4	2	G005A;	S3; S4
UEENEEG063A	RESERVED				
UEENEEG064A	Repair mechanical components of electrical machines	3/4	3	E002A; E005A; E007A;	UEE 3 06 06; UEE 3 07 06; UEE 3 19 06; S3; S4
UEENEEG065A	Maintain and service traction lifts	3/4	2	G016A;	S3; S4
UEENEEG066A	Installation and maintenance of escalators, moving walks and tread ways	3/4	2	G016A;	S3; S4
UEENEEG067A	Align and install lift equipment	3/4	2	G016A;	S3; S4
UEENEEG068A	Diagnose and rectify faults in complex lifts systems	4/5	2	G016A; H043A; H044A;	UEE 4 11 06; S4; S5
UEENEEG069A	Manage electrical projects	6	2	After the technical units in a qualification have been achieved.	UEE 6 01 06; S6
UEENEEG070A	Plan electrical projects	6	3	After the technical units in a qualification have been achieved.	UEE 6 01 06; S6
UEENEEG071A	Install and set up interval metering	4	1	F002; G005A;	S4
UEENEEG072A	Investigate and report on electrical incidents	4/5	3	G021A; G023A; G024A	S4; S5;

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H – Electronics units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEH001A	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies	2	2	E002A; E007A; AND E004A; OR E023A;	UEE 2 05 06; UEE 3 02 06; UEE 4 01 06; UEE 5 01 06;
UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components	2	2	E002A; E004A; E007A;	UEE 2 09 06; UEE 2 19 06; UEE 3 01 06; UEE 3 09 06; UEE 3 11 06; UEE 3 15 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 05 06; UEE 6 02 06; S2
UEENEEH003A	Carry out routine repairs to business equipment	2	6	E002A;E005A;E007A;	UEE 2 02 06; UEE 3 01 06; S2
UEENEEH004A	Set up and test residential audio/video equipment	2	2	None	UEE 3 03 06; S2
UEENEEH005A	Verify compliance and functionality of custom electronic installations	3	2	H006A;	UEE 3 03 06; S3
UEENEEH006A	Assemble and set up fixed audio/video components and systems in buildings and premises	2/3	6	E008A;	UEE 2 06 06; UEE 3 03 06; S2; S3
UEENEEH007A	Carry out repairs of predictable faults in general electronic apparatus	3/4	2	H012A; H013A; H038A;	UEE 3 01 06; UEE 3 11 06; S3; S4
UEENEEH008A	Assemble and erect reception antennae and signal distribution equipment	2	3	E002A; E005A; E007A;	UEE 2 12 06; S2
UEENEEH009A	Set up and test gaming/games equipment	2	3	None	UEE 2 11 06; UEE 3 11 06; S2
UEENEEH010A	Install commercial audio/video system components	3	6	E002A; E005A; E007A;	S3

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
				E008A;	
UEENEEH011A	Solve problems in d.c. power supplies with single phase input	3	2	(H001A; OR H002A;) AND (H014A; OR G002A; or G012A)	UEE 3 01 06; UEE 3 09 06; UEE 3 11 06; UEE 3 15 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 05 06; UEE 6 02 06; UEE 6 03 06; S3
UEENEEH012A	Solve problems in digital components of electronic apparatus	3	4	H001A; OR H002A; OR H070A;	UEE 3 01 06; UEE 3 02 06;UEE 3 09 06; UEE 3 11 06; UEE 3 15 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 05 06; UEE 6 02 06; UEE 6 03 06; UEE 6 05 06; S3
UEENEEH013A	Solve problems in amplifier sections of electronic apparatus	3	4	H039A;	UEE 3 01 06; UEE 3 09 06; UEE 3 11 06; UEE 3 15 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 05 06; S3
UEENEEH014A	Solve problems in frequency dependent circuits	3	2	E004A	UEE 3 01 06; UEE 3 02 06; UEE 3 09 06; UEE 3 11 06; UEE 3 12 06; UEE 3 15 06; UEE 3 18 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 01 06; UEE 5 05 06; UEE 6 02 06; S3

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEH015A	Solve problems in microprocessor based hardware and firmware	3	3	H001A; OR; H002A	UEE 3 02 06; UEE 3 11 06; UEE 3 15 06; UEE 4 17 06; S3
UEENEEH016A	Find and repair faults in the microwave amplifier sections of electronic apparatus	3	3	H046A;	S3
UEENEEH017A	Carry out repairs of predictable faults in audio and video replay/recording apparatus	3/4	6	H012A; H013A; H038A;	S3; S4
UEENEEH018A	Find and repair faults in electronic apparatus	3	4	H007A;	S3
UEENEEH019A	Carry out repairs of predictable faults in television receivers	3/4	6	H012A; H013A; H038A;	UEE 4 15 06; S3; S4
UEENEEH020A	Find and repair faults in gaming and games equipment	3/4	4	H009A; H011A; H012A; H013A; H038A;	UEE 3 11 06; S3; S4
UEENEEH021A	Find and repair faults in high volume office equipment	3	6	H003A;	UEE 3 01 06; S3
UEENEEH022A	Find and repair faults in remote control apparatus	3/4	3	H012A; H013A; H038A;	S3; S4
UEENEEH023A	Find and repair faults in microwave heating apparatus	3	2	E034A;	S3
UEENEEH024A	Carry out repairs of predictable faults in audio components	3/4	2	H012A; H013A; H038A;	S3; S4
UEENEEH025A	Provide solutions to single phase electronic power control problems	4/5	3	H013A or H044A	S4; S5
UEENEEH026A	Provide solutions to polyphase electronic power control problems	4/5	3	H025A	S4; S5

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEH027A	Commission commercial radio frequency (RF) transmission and reception systems	3/4	4	H072A;	S3; S4
UEENEEH028A	Install microwave and antennae and waveguides	2	3	E002A; E005A; E007A;	S2
UEENEEH029A	Diagnose and rectify faults in navigation systems	4	3	H016A; H072A;	S4
UEENEEH030A	Diagnose and rectify faults in satellite-based surveillance and observation systems	4/5	3	H016A; H072A;	S4; S5
UEENEEH031A	Diagnose and rectify faults in radar apparatus and systems	4/5	6	H016A; H072A;	S4; S5
UEENEEH032A	Diagnose and rectify faults in global positioning systems	4/5	3	H016A; H072A;	S4; S5
UEENEEH033A	Diagnose and rectify faults in telecommunication apparatus and systems	4/5	3	H012A; H013A; H015A;	S4; S5
UEENEEH034A	Diagnose and rectify faults in electronic medical equipment	4/5	6	H012A; H013A; H015A;	S4; S5
UEENEEH035A	Design custom electronic installations	4/5	6	H005A;	S4; S5
UEENEEH036A	Design commercial audio/video installations	4/5	6	H037A;	S4; S5
UEENEEH037A	Program and commission commercial audio/video systems	4	2	H010A;	S4
UEENEEH038A	Find and repair faults in complex power supplies	3	2	H011A;	UEE 3 01 06; UEE 3 09 06; UEE 3 11 06; UEE 3 15 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 05 06; S3

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEH039A	Solve problems in basic amplifier circuits	3	2	H002A; OR H070A; AND H014A; OR G002A	UEE 3 01 06; UEE 3 09 06; UEE 3 11 06; UEE 3 15 06; UEE 4 07 06; UEE 4 15 06; UEE 4 17 06; UEE 5 05 06; UEE 6 02 06; UEE 6 03 06; S3
UEENEEH040A	Diagnose and rectify faults in sonar apparatus and systems	4	6	H012A; H013A; H015A; H016A; H072A;	S4
UEENEEH041A	Manage and implement electronic projects	6	2	After the technical units in a qualification have been achieved.	UEE 6 02 06; S6
UEENEEH042A	Solve problems in oscillator sections of electronic apparatus	3	2	E007A; H014A; H039A	S3
UEENEEH043A	Diagnose and rectify faults in digital subsystems of electronic controls	4	3	G008A;	UEE 4 11 06;S4
UEENEEH044A	Diagnose and rectify faults in analogue circuits and components in electronic control systems	4/5	3	G008A;	UEE 4 11 06; S4; S5
UEENEEH045A	Develop solutions to analogue electronic problems	4	3	H039A;	S4
UEENEEH046A	Solve fundamental problems in electronic communications systems	3	4	H013A;	UEE 6 03 06; S3
UEENEEH047A	Assess compliance of electronic apparatus	6	3	With other technical units in a qualification	S6
UEENEEH048A	Design and develop advanced digital systems	5/6	4	H012A;	S5; S6

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEH049A	Develop solutions to audio electronic problems	5/6	3	H039A;	S5; S6
UEENEEH050A	Assemble and set up basic wired and wireless security systems	2	4	E002A; E005A; E007A;	UEE 2 16 06; UEE 3 14 06; S2
UEENEEH051A	Install large wired and wireless security systems	3	5	H050A;	UEE 3 14 06; S3
UEENEEH052A	Enter instructions and test basic wired and wireless security systems	3	2	H050A;	UEE 3 14 06; S3
UEENEEH053A	Program and test large wired and wireless security systems	4/5	6	H054A; H055A; H056A;	UEE 3 14 06; S4; S5
UEENEEH054A	Program and commission commercial security alarm systems	3/4	3	H052A;	UEE 3 14 06; S3; S4
UEENEEH055A	Program and commission commercial security access control systems	3/4	3	H052A;	UEE 3 14 06; S3; S4
UEENEEH056A	Program and commission commercial security closed circuit television (CCTV) systems	3/4	3	H052A;	UEE 3 14 06; S3; S4
UEENEEH057A	Develop basic integrated security systems plan	4/5	2	H053A;	S4; S5
UEENEEH058A	Design integrated security systems for a single site	5	2	H016A; H057A;	S5
UEENEEH059A	Design integrated complex security systems	5	3	H017A; H058A;	S5
UEENEEH060A	Plan electronic projects	6	3	Core – with technical units in a qualification	UEE 6 02 06; S6
UEENEEH061A	Position and terminate fire detection and warning system apparatus	2	2	E002A; E005A; E007A;	UEE 2 10 06; UEE 3 10 06; UEE 4 08 06; S2
UEENEEH062A	Verify compliance and functionality of fire	2	3	H061A;	UEE 2 10 06; UEE 3 10 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	protection installations				UEE 4 08 06; S2
UEENEEH063A	Enter and verify programs in preparation for commissioning fire protection systems	3	2	H062A;	UEE 3 10 06; UEE 4 08 06; S3
UEENEEH064A	Commission commercial fire protection systems	3/4	2	H063A;	UEE 3 10 06; UEE 4 08 06; S3; S4
UEENEEH065A	Find and repair faults in fire protection systems	3/4	2	H064A;	UEE 3 10 06; UEE 4 08 06; S3; S4
UEENEEH066A	Fault find micro-controller based hardware	3	2	None	S3
UEENEEH067A	RESERVED				
UEENEEH068A	RESERVED				
UEENEEH069A	RESERVED				
UEENEEH070A	Terminate and connect components, conductors, wiring and cables for electronic circuits	6	2	E002A; E007A; AND G012A; OR G049A	UEE 6 03 06; UEE 6 05 06; S6
UEENEEH071A	Find and repair faults in television receivers	3/4	6	H019A	UEE 4 15 06; S3; S4
UEENEEH072A	Find and repair faults in the RF sections of electronic apparatus	3/4	6	H012A; H013A; H038A; H046A	S3; S4
UEENEEH073A	Find and repair faults in professional audio reproduction components	3/4	6	H024A;	S3; S4
UEENEEH074A	Find and repair faults in audio/video recording equipment	3/4	6	H017A;	S3; S4
UEENEEH075A	Find and rectify faults and malfunctions in security system installations	4	3	H053A;	S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEH076A	Diagnose and rectify faults in display circuits	4	3	H071A;	S4
UEENEEH077A	Diagnose and rectify faults in recording and replay apparatus	4	3	H074A;	S4
UEENEEH078A	Diagnose and rectify faults in camera circuits	4	3	H018A;	S4
UEENEEH079A	Diagnose and rectify faults in digital television apparatus	4	4	H076A;	S4
UEENEEH080A	Diagnose and rectify faults in digital transmission systems	4	4	H076A;	S4
UEENEEH081A	Design printed circuit boards	4	2	E025A; or H002A, or H012A and H013A	S4
UEENEEH082A	Develop solutions to RF amplifiers problems	5	2	H045A	S5;
UEENEEH083A	Analyse the performance of wireless-based electronic systems	5	2	H046A	S5;
UEENEEH084A	Design DSP-based systems	6	6	H012A; H045A	S6
UEENEEH085A	Design electronic data acquisition systems	6	4	H012A; H045A	S6

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I – Instrumentation and control units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEI001A	Install and set up transducers and sensing devices	3/4	2	E002A; E005A; E007A	UEE 3 12 06; UEE 3 18 06; UEE 4 04 06; S3; S4
UEENEEI002A	Solve problems in pressure measurement systems	3/4	2	I001A;	UEE 3 12 06; UEE 3 18 06; UEE 4 04 06; S3; S4
UEENEEI003A	Solve problems in density/level measurement systems	3/4	2	I002A;	UEE 3 12 06; UEE 3 18 06; UEE 4 04 06; S3; S4
UEENEEI004A	Solve problems in flow measurement systems	3/4	2	I002A;	UEE 3 12 06; UEE 3 18 06; UEE 4 04 06; S3; S4
UEENEEI005A	Solve problems in temperature measurement systems	3/4	2	I001A;	UEE 3 12 06; UEE 3 18 06; UEE 4 04 06; S3; S4
UEENEEI006A	Solve problems in process controllers, transmitters and converters	3/4	6	I003A; I004A; I005A; AND any one, of G002A OR H014A	UEE 3 12 06; UEE 3 18 06; S3; S4
UEENEEI007A	Install process instrumentation and control cabling and tubing	3/4	2	I001A;	UEE 3 12 06; UEE 3 18 06; S3; S4
UEENEEI008A	Install process control apparatus and associated equipment	3/4	2	I001A;	UEE 3 12 06; UEE 3 18 06; S3; S4
UEENEEI009A	Set up process measuring and control instruments	3/4	6	I006A;	S3; S4
UEENEEI010A	Set up and adjust process control loops	3/4	2	I006A;	UEE 3 12 06; UEE 3 18 06; S3; S4
UEENEEI011A	Find and rectify faults in process control valve and	3/4	2	I007A; I008A;	S3; S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	associated equipment				
UEENEEI012A	Verify compliance and functionality of process control installations	3/4	2	D005A; I010A; I013A; and elective units from Schedule 3 to a Unit Strand value of 4	UEE 3 12 06; UEE 3 18 06; UEE 4 09 06; UEE 5 02 06; UEE 5 09 06; UEE 6 06 06; UEE 6 12 06; S3; S4
UEENEEI013A	Select equipment for process control systems	3/4	4	I010A;	UEE 3 12 06; UEE 3 18 06; S3; S4
UEENEEI014A	Find and rectify faults in process control systems	3/4	3	I009A	S3; S4
UEENEEI015A	Find and rectify faults in medical equipment control systems	4/5	6	After the core competencies in electronics or instrumentation at AQF level 3 have been acquired.	S4; S5
UEENEEI016A	RESERVED				
UEENEEI017A	Calibrate and test measuring instruments	3/4	2	After the core competencies in electronics or instrumentation at AQF level 3 have been acquired.	S3; S4
UEENEEI018A	RESERVED				
UEENEEI019A	Set up field control devices	4/5	3	E002A; E007A;	S4; S5

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEI020A	Provide solutions to problems in basic industrial control systems	4/5	3	None	S4; S5
UEENEEI021A	Find and repair faults in measuring and analysis systems	4	2	I012A;	S4
UEENEEI022A	Assist in commissioning process control systems	4/5	2	I012A;	S4; S5
UEENEEI023A	Design electronic control systems	5/6	3	H012A;	S5; S6
UEENEEI024A	RESERVED				
UEENEEI025A	Provide solutions to fluid circuit operations	4/5	3	E001A; E002A; E007A;	S4; S5
UEENEEI026A	Provide solutions to pneumatic/hydraulic system operations	4/5	4	I025A;	S4; S5
UEENEEI027A	Analyse complex electronic circuits controlling fluids	4/5	4	I025A;	S4; S5
UEENEEI028A	Set up controls on complex fluid systems	6	4	D025A; D034A; D052A; I019A; I027A;	UEE 6 11 06; S6
UEENEEI029A	Set up electronically controlled mechanically operated complex systems	6	4	D025A; D034A; D052A; I019A; I025A;	S6
UEENEEI030A	Set up electronically controlled robotically operated complex systems	6	4	D025A; D034A; D052A; I019A; I025A	S6
UEENEEI031A	RESERVED				
UEENEEI032A	RESERVED				
UEENEEI033A	RESERVED				

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEI034A	Manage control projects	6	2	After the technical units in a qualification have been achieved.	UEE 6 06 06; S6
UEENEEI035A	Plan control projects	6	3	After the technical units in a qualification have been achieved.	UEE 6 06 06; S6
UEENEEI036A	Manage automated systems projects	6	2	After the technical units in a qualification have been achieved.	UEE 6 11 06; S6
UEENEEI037A	Plan automated systems projects	6	3	After the technical units in a qualification have been achieved.	UEE 6 11 06; S6

J – Refrigeration and air conditioning units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEJ001A	RESERVED				
UEENEEJ002A	Prepare refrigeration tubing and fittings	2/3	2	E002A; E007A;	UEE 2 01 06; UEE 2 18 06; UEE 3 05 06; UEE 3 13 06; UEE 4 05 06; S2; S3
UEENEEJ003A	Determine the basic operating conditions of vapour	2/3	2	E002A;	UEE 2 01 06; UEE 2 18 06; UEE 3 05 06; UEE 3 13 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	compression systems				S3
UEENEEJ004A	Determine the basic operating conditions of air conditioning systems	2/3	2	E002A;	UEE 3 13 06; S2; S3
UEENEEJ005A	Position, assemble and start up split air conditioning systems	2/3	3	J002A; J072A;	UEE 2 01 06; UEE 4 05 06; S2; S3
UEENEEJ006A	Install pipework for refrigeration and air conditioning systems	3	Core only	E005A; J002A; J003A	UEE 3 13 06;
UEENEEJ007A	Install refrigeration and air conditioning systems, major components and associated equipment	3	Core only	J006A; J008A;	UEE 3 13 06;
UEENEEJ008A	Recover, pressure and leak test, evacuate and charge refrigerants	3	Core only	J002A; J003A;	UEE 3 13 06;
UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations	3	Core only	E001A; E002A; E003A; E005A; E007A; E037A; E038A; J002A; J003A; J004A ; J006A; J007A; J008A; J010A; J011A; J013A; J036A; J070A; P001A; P002A; P003A; P007A; and elective units from Schedule 3 to a Unit Strand value of 3	UEE 3 13 06; UEE 4 10 06; UEE 4 13 06; UEE 4 14 06; UEE 5 03 06; UEE 6 06 06; UEE 6 07 06;
UEENEEJ010A	Select refrigerant pipe/tube, accessories and associated controls	3	6	J003A;	UEE 3 13 06; S3
UEENEEJ011A	Diagnose and rectify faults in refrigeration and air	3	Core	J007A; J070A; P007A;	UEE 3 13 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	conditioning systems and components		only		
UEENEEJ012A	Diagnose and rectify faults in complex refrigeration/air conditioning systems	4	5	J009A;	UEE 4 13 06; S4
UEENEEJ013A	Commission refrigeration and air conditioning systems	3	Core only	J007A; J070A;P007A;	UEE 3 13 06;
UEENEEJ014A	Solve problems in hydronic systems	3/4	2	J011A; J013A;	S3; S4
UEENEEJ015A	Solve problems in beverage dispensers	3/4	2	J011A; J013A;	S3; S4
UEENEEJ016A	Solve problems in transport refrigeration systems	3/4	2	J011A; J013A;	S3; S4
UEENEEJ017A	Solve problems in ultra-low temperature refrigeration systems	3/4	1	J011A; J013A;	S3; S4
UEENEEJ018A	Solve problems in post mix refrigeration systems	3/4	2	J011A; J013A;	S3; S4
UEENEEJ019A	Solve problems in ice making systems	3/4	2	J011A; J013A;	S3; S4
UEENEEJ020A	Solve problems in industrial refrigeration systems	3/4	2	J011A; J013A;	S3; S4
UEENEEJ021A	Monitor and adjust energy management systems on refrigeration systems	4	2	J009A;	S4
UEENEEJ022A	Diagnose faults in complex refrigeration or HVAC control systems	4	4	J012A;	S4
UEENEEJ023A	Commission complex heating, ventilation and air conditioning (HVAC) systems	4	5	J012A;	S4
UEENEEJ024A	Commission hydronic systems for refrigeration and air conditioning	4	4	J012A;	S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEJ025A	Commission complex refrigeration systems	4	4	J012A;	S4
UEENEEJ026A	Commission complex control systems for refrigeration and air conditioning systems	4	4	J012A;	S4
UEENEEJ027A	Determine thermodynamic parameters of refrigeration and air conditioning systems	4	5	J064A	UEE 4 14 06; UEE 5 06 06; UEE 6 07 06; S4
UEENEEJ028A	Produce HVAC/R design drawings	4	4	J064A	UEE 4 14 06; UEE 5 06 06; UEE 6 07 06; S4
UEENEEJ029A	Determine the heat loads for commercial refrigeration and air conditioning applications	4	4	J064A	UEE 4 14 06; UEE 5 06 06; UEE 6 07 06; S4
UEENEEJ030A	Produce HVAC/R control system design diagrams	4	2	J064A	S4
UEENEEJ031A	Provide solutions to vibration problems in HVAC/R system design	5	4	J065A;	UEE 5 06 06; UEE 6 07 06; S5
UEENEEJ032A	Design commercial refrigeration systems	5	4	J031A;	S5
UEENEEJ033A	Design industrial refrigeration systems	5	6	J031A;	S5
UEENEEJ034A	Design heating, ventilation and air conditioning (HVAC) systems	5	4	J031A;	S5
UEENEEJ035A	Design control systems for a heating, ventilation, air conditioning or refrigeration system	5	4	J030A;	S5
UEENEEJ036A	Evaluate and report on energy management	5	4	J009A;	UEE 4 10 06; S5
UEENEEJ037A	Evaluate and report on air quality in buildings	5	2	J009A;	S5
UEENEEJ038A	Analyse noise and vibration in refrigeration and air conditioning systems	6	8/Core	J065A;	UEE 6 07 06; UEE 6 08 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEJ039A	Develop specifications and prepare drawings for HVAC/R projects	6	3	J028A;	S6
UEENEEJ040A	Manage refrigeration and air conditioning projects	6	2	After the technical units in a qualification have been achieved.	UEE 6 07 06; S6
UEENEEJ041A	Design complex commercial refrigeration systems	6	2	J032A; J038A;	S6
UEENEEJ042A	Design complex industrial refrigeration systems	6	2	J033A; J038A;	S6
UEENEEJ043A	Design complex air conditioning systems	6	6	J034A; J038A;	S6
UEENEEJ044A	Design mechanical ventilation/exhaust systems	6	2	J034A; J038A;	S6
UEENEEJ045A	Design hydronic systems	6	6	J038A;	S6
UEENEEJ046A	Design complex control systems for a heating, ventilation, air conditioning or refrigeration system	6	4	J035A;	S6
UEENEEJ047A	Audit energy use for commercial HVAC/R systems	6	2	J036A;	S6
UEENEEJ048A	Analyse HVAC control systems for compliance with standards and regulations	6	6	J035A;	S6
UEENEEJ049A	Develop specifications for heat exchanger designs	6	4	J038A;	S6
UEENEEJ050A	Evaluate alternative and new technologies applicable to electrotechnology applications	6	2	In conjunction with other relevant units in a qualification	S6
UEENEEJ051A	Service small appliances and power tools	2/3	3	E002A;	UEE 3 05 06; S2; S3
UEENEEJ052A	Carry out repairs to appliance refrigeration systems	2/3	1	E002A; E005A; E007A; J003A;	S2; S3

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEJ053A	Find and rectify faults in appliance motors and associated controls	3	6	E002A; E003A; E004A; E005A; E007A; J008A	UEE 3 05 06; UEE 3 13 06; S3
UEENEEJ054A	Find and rectify faults in appliance control devices and systems	3	3	J053A;	UEE 3 05 06; S3
UEENEEJ055A	Service refrigerated appliances	3	3	J054A; J062A;	UEE 3 05 06; S3
UEENEEJ056A	Service clothes washers and dryers	3	2	J054A;	UEE 3 05 06; S3
UEENEEJ057A	Service electric heating appliances	3	4	J054A;	S3
UEENEEJ058A	Service dish washing machines	3	2	J054A;	S3
UEENEEJ059A	Service gas appliances	3	2	J054A;	S3
UEENEEJ060A	Service room air conditioners	3	2	J054A; J062A;	S3
UEENEEJ061A	Verify compliance and functionality of appliances	3	2	E001A; E002A, E003A; E005A; E007A; E037A J002A; J003A; J051A; J053A; J054A; J055A; J056A; J062A; P001A; P002A; P003A; P007A; and after all other core units and nominated elective units have been achieved from Schedule 3 to a Unit Stand Value of 5.	UEE 3 05 06; S3
UEENEEJ062A	Recover, pressure and leak test, evacuate and charge	2	2	J002A; J003A;	UEE 2 18 06; UEE 3 05 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	refrigerants/appliance				S2
UEENEEJ063A	Analyse the psychrometric and thermodynamic performance of HVAC/R systems	4	6	None	S4
UEENEEJ064A	Analyse the operation of HVAC/R systems	4	6	J063A; OR J009A	S4
UEENEEJ065A	Evaluate fluid and thermodynamic parameters of refrigeration systems	5	6	J027A;	UEE 5 06 06; UEE 6 07 06; UEE 6 08 06; S5
UEENEEJ066A	Solve problems in diary refrigeration systems	3/4	1	J011A; J013A;	S3; S4
UEENEEJ067A	Solve problems in central air conditioning systems	3/4	1	J011A; J013A;	S3; S4
UEENEEJ068A	Maintain microbial control of air and water systems	3/4	1	None	S3; S4
UEENEEJ069A	Plan refrigeration and air conditioning projects	6	3	After the technical units in a qualification have been achieved.	UEE 6 07 06; S6
UEENEEJ070A	Diagnose and rectify faults in refrigeration and air conditioning control systems	3	Core only	J003A; J004A; J007A; J053A;	UEE 3 13 06;
UEENEEJ071A	Solve problems in refrigerated beverage vending cabinets	3	1	J011A; J013A;	S3; S4;
UEENEEJ072A	Recover, pressure and leak test, evacuate and charge refrigerants – split air conditioning systems	2	2	J002A;	UEE 2 01 05; S2;
UEENEEJ073A	Service microwave ovens	3	2	J054A;	S3;

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K – Renewable sustainable energy

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEK001A	Maintain safety and tidiness of remote area power supply (RAPS) systems	2	1	None	UEE 2 14 06; S2
UEENEEK002A	Work safely with remote area power supply (RAPS) systems	2	1	None	UEE 2 14 06; S2
UEENEEK003A	Conduct periodic maintenance of remote area power supply (RAPS) battery banks	2	2	E001A; E002A; E003A; K001A;	S2
UEENEEK004A	Conduct periodic maintenance of remote area power supply (RAPS) generator sets	2	2	E001A; E002A; E003A; K001A;	S2
UEENEEK005A	Conduct periodic maintenance of remote area power supply (RAPS) photo voltaic arrays	2	2	E001A; E002A; E003A; K001A;	S2
UEENEEK006A	Conduct periodic maintenance of remote area power supply (RAPS) wind generators	2	2	E001A; E002A; E003A; K001A;	S2
UEENEEK007A	Conduct audits in the demand side use of remote area power supplies	2/3	2	E001A; K002A; K003A; K004A; K005A; K006A;	S2; S3
UEENEEK008A	Plan periodic maintenance schedules of remote area power supplies	2/3	2	E001A; E033A; K002A; K003A; K004A;	S2; S3
UEENEEK009A	Attend to breakdowns in remote area power supplies	3	1	E001A; E002A; E003A; K001A;	S3
UEENEEK010A	Coordinate maintenance of renewable energy apparatus and systems	4	1	E001A; E002A; E003A; K001A;	S4
UEENEEK011A	Assemble and connect remote area power supplies	2	3	E002A; E003A; E007A;	S2

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEK012A	Provide basic sustainable energy solutions for energy reduction in domestic premises	2	2	None	UEE 2 21 06; S2
UEENEEK013A	Apply sustainable energy practice in daily activities	2	5	None	UEE 2 21 06; S2
UEENEEK014A	Promote sustainable energy practice in the community	2	2	None	UEE 2 21 06; S2
UEENEEK015A	Reserved				
UEENEEK016A	Reserved				
UEENEEK017A	Maintain and repair facilities associated with remote area essential services operation	2/3	6	E001A; E002A; E003A;	UEE 2 13 06; S2; S3
UEENEEK018A	Maintain operation of remote area water facilities	2/3	6	K017A;	S2; S3
UEENEEK019A	Maintain operation of remote area waste water facilities	2/3	4	K017A;	S2; S3
UEENEEK020A	Maintain operation of remote area power plant	2/3	6	K017A;	S2; S3
UEENEEK021A	Manage renewable energy projects	6	2	After the technical units in a qualification have been achieved.	UEE 6 09 06; S6;
UEENEEK022A	Plan renewable energy projects	6	3	After the technical units in a qualification have been achieved.	UEE 6 09 06; S6;
UEENEEK023A	Carry out basic repairs to renewable energy apparatus by replacement of components	2/3/4	4	E004A; E008A;	UEE 2 15 06; UEE4 16 06; UEE 6 10 06; S2; S3; S4;
UEENEEK024A	Assemble and set up photovoltaic apparatus in	2/3	1	K025A	UEE 2 15 06; S2; S3

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	domestic dwellings				
UEENEEK025A	Solve basic problems in photovoltaic energy apparatus	2/3/4	4	K023A	UEE 2 15 06; UEE 6 10 06; S2; S3; S4;
UEENEEK026A	Install and set up grid connected photovoltaic power systems	3/4	2	K025A	S3; S4;
UEENEEK027A	Diagnose faults in renewable energy control systems	4/5	3	K025A	S3; S4; S5
UEENEEK028A	Solve problems in stand-alone renewable energy systems	4/5	3	K023A	UEE 6 10 06; S3;S4; S5;
UEENEEK029A	Design renewable energy heating systems	5/6	6	K028A	S5; S6;
UEENEEK030A	Solve problems in wind energy conversion systems	4/5	3	K023A	S3;S4; S5;
UEENEEK031A	Design wind energy conversion systems rated to 10 kW.	5/6	3	K030A	S5; S6;
UEENEEK032A	Develop strategies to address sustainability issues	4/5	1	None	UEE 6 10 06; S4; S5;
UEENEEK033A	Design set up hybrid power systems	5/6	4	K028A	S5; S6;
UEENEEK034A	RESERVED				
UEENEEK035A	Design grid connected power supply systems	5/6	6	K025A	S5; S6;
UEENEEK036A	RESERVED				
UEENEEK037A	Install and set up micro-hydro systems	3/4	1	K023A	S3; S4;
UEENEEK038A	Design micro-hydro systems	4/5	3	K028A	S4; S5;
UEENEEK039A	Design stand-alone renewable energy systems	5/6	2	K028A	S5; S6;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEK040A	Develop engineering solution to renewable energy problems	6	3	K031A; K032A; K035A; K038A; K039A;	S5; S6;
UEENEEK041A	Develop strategies for effective energy reduction in buildings	5/6	6	K032A	UEE 6 10 06; S5; S6;

L – Imported units

National Code	Title	AQF	Strand	Prerequisites (for relevant prerequisite or co-requisite refer respective unit)	Qualifications
ICTTC056	Install telecomm network equipment.	3	2	Additional to core units in a qualification	S3
ICTTC083	Locate and rectify complex CPE fault (PABX repair)	4	4	Additional to core units in a qualification	S4
ICTTC085	Monitor, analyse and action alarms	4	2	Additional to core units in a qualification	S4
ICTTC088	Locate and rectify network faults	4	4	Additional to core units in a qualification	S4
UETTDRIS04A	Perform high voltage field switching operation to a given schedule	3/4	2	Additional to core units in a qualification	S2; S3
BSBCMN306A	Produce business documents	5	2	Additional to core units in a qualification	S5
BSBSBM405A	Monitor and manage business operations	5	2	Additional to core units in a qualification	S5

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National Code	Title	AQF	Strand	Prerequisites (for relevant prerequisite or co-requisite refer respective unit)	Qualifications
PMBQUAL390A	Solve problems using 'quality tools'	5	2	Additional to core units in a qualification	S5
BSBFLM503B	Manage effective workplace relationships	5/6	SC	In conjunction with core units in a qualification	UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 01 06; UEE 6 02 06; UEE 6 04 06; UEE 6 06 06; UEE 6 07 06; UEE 6 09 06; UEE 6 11 06; UEE 6 12 06;
BSBFLM506B	Manage workplace information systems	5/6	SC	In conjunction with core units in a qualification	UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 01 06; UEE 6 02 06; UEE 6 03 06; UEE 6 04 06; UEE 6 05 06; UEE 6 06 06; UEE 6 07 06; UEE 6 08 06; UEE 6 09 06; UEE 6 10 06; UEE 6 11 06; UEE 6 12 06;
BSBFLM509B	Facilitate continuous improvement	5/6	SC	In conjunction with core units in a qualification	UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 01 06; UEE 6 02 06; UEE 6 04 06;

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National Code	Title	AQF	Strand	Prerequisites (for relevant prerequisite or co-requisite refer respective unit)	Qualifications
					UEE 6 06 06; UEE 6 07 06; UEE 6 09 06; UEE 6 11 06; UEE 6 12 06;
BSBFLM510B	Facilitate and capitalise on change and innovation	5/6	SC	In conjunction with core units in a qualification	UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 01 06; UEE 6 02 06; UEE 6 04 06; UEE 6 06 06; UEE 6 07 06; UEE 6 09 06; UEE 6 11 06; UEE 6 12 06;
BSBFLM512B	Ensure team effectiveness	5/6	SC	In conjunction with core units in a qualification	UEE 5 01 06; UEE 5 02 06; UEE 5 03 06; UEE 5 04 06; UEE 5 05 06; UEE 5 06 06; UEE 5 07 06; UEE 5 08 06; UEE 5 09 06; UEE 6 01 06; UEE 6 02 06; UEE 6 03 06; UEE 6 04 06; UEE 6 05 06; UEE 6 06 06; UEE 6 07 06; UEE 6 08 06; UEE 6 09 06; UEE 6 10 06; UEE 6 11 06; UEE 6 12 06;
EPOPS234A	Perform routine oxyacetylene (Fuel gas) welding	2/3	2		S2; S3
UEPOPS235A	Perform routine manual arc welding	2/3	2		S2; S3
UEPOPS236A	Perform manual heating, thermal cutting and	2/3	2		S2; S3

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National Code	Title	AQF	Strand	Prerequisites (for relevant prerequisite or co-requisite refer respective unit)	Qualifications
	gouging				

M – Hazardous areas units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEM001A	Report on the integrity of explosion-protected equipment in hazardous areas	2	1	Competencies in plant operation or general plant maintenance.	UEE 3 17 06; UEE 3 18 06; S2
UEENEEM002A	Attend to breakdowns in hazardous areas	3	1	M001A; and competencies in attending to breakdowns in general electrical or instrumentation equipment.	S3
UEENEEM003A	Use and maintain the integrity of portable gas detection devices	3	1	Competencies in plant operation or general plant maintenance.	S3
UEENEEM004A	Install explosion-protected equipment and wiring systems	3	3	M001A; and competencies in installing general low voltage or extra-low voltage electrical/electronic equipment	UEE 4 18 06; S3

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEM005A	Install and maintain integrity of fixed gas detection equipment	3	1	M004A; or M006A;	S3
UEENEEM006A	Maintain equipment in hazardous areas	3	3	M001A; and competencies in maintaining general low voltage or extra-low voltage electrical/electronic equipment	S3
UEENEEM007A	Overhaul and repair explosion-protected equipment	3	3	Competencies in overhauling general low voltage or extra-low voltage electrical/electronic equipment.	UEE 3 19 06; S3
UEENEEM008A	Assess explosion-protected equipment for compliance with standards	4	2	Competencies in compliance assessment of general low voltage or extra-low voltage electrical/electronic equipment.	S4
UEENEEM009A	Test installations in hazardous areas	3/4	2	M004A; or M006A;	S3; S4
UEENEEM010A	Conduct close inspection of existing hazardous areas installations	3/4	1	M002A; or M004A; or M006A; or M016A;	UEE 6 12 06; S3; S4
UEENEEM011A	Conduct detailed inspection of hazardous areas	4	2	M010A;	S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	installations				
UEENEEM012A	Develop and manage maintenance programs for hazardous areas electrical equipment	4	1	M006A; or competencies in developing and managing general electrical/instrumentation maintenance programs	S4
UEENEEM013A	Ensure the safety of hazardous areas	4	1	Competencies in general plant/site management	S4
UEENEEM014A	Design and develop modifications to explosion-protected equipment	5	2	M007A;	S5
UEENEEM015A	Classify hazardous areas	6	2	Competencies in gathering and analysing technical data for risk assessment	UEE 6 12 06; S6
UEENEEM016A	Design electrical installations in hazardous areas	4/5	1	M004A;	S4; S5
UEENEEM017A	Design explosion-protected electrical systems	6	1	Competencies in designing general electrical systems and installations	S6
UEENEEM018A	Design gas detection systems	6	1	M017A;	S6

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N – Rail signalling units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEN001A	Service mechanical signalling equipment and infrastructure	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN002A	Assemble and wire internal electrical signalling equipment	3/4	1	G004A; and work place requirements in 'Work site protection' have been acquired.	UEE 4 12 06; S3; S4
UEENEEN003A	Install and maintain track circuit leads and bonds	3/4	1	G017A; and work place requirements in 'Work site protection' have been acquired.	S3; S4
UEENEEN004A	Perform cable tests	3/4	1	G005A; and work place requirements in 'Work site protection' have been acquired.	S3; S4
UEENEEN005A	Install and maintain signalling power supplies	3/4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S3; S4
UEENEEN006A	Maintain remote control and non-vital interlocking control systems	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN007A	Maintain power signalling and protected level crossing equipment	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN008A	Maintain on-site power operated point-activating	3/4	1	Relevant work place	S3; S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	devices			requirements in 'Work site protection' have been acquired.	
UEENEEN009A	Maintain track circuits equipment	3/4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S3; S4
UEENEEN010A	Maintain electronic signalling and communication equipment	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN011A	Install and maintain power operated signalling equipment	3/4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S3; S4
UEENEEN012A	Maintain power signalling and protective relay interlocking systems	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN013A	Install and test computer based interlocking equipment	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN014A	Maintain computer based and solid state interlocking equipment	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN015A	Conduct routine inspecting and testing of new signal cables and lines	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN016A	Maintain electronic switched and microprocessor-	4	1	Relevant work place	S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	based remote control systems			requirements in 'Work site protection' have been acquired.	
UEENEEN017A	Install and maintain transmission interface equipment	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN018A	Find and repair cable system faults	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN019A	Test equipment and isolate faults	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN020A	Install electrical power and control equipment for rail networks	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN021A	RESERVED				
UEENEEN022A	RESERVED				
UEENEEN023A	RESERVED				
UEENEEN024A	RESERVED				
UEENEEN025A	Coordinate and manage track protection	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN026A	Develop rail signalling maintenance programmes	4	1	Relevant work place requirements in 'Work site	S4

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
				protection' have been acquired.	
UEENEEN027A	Decommission electrical and electro-mechanical signalling from service	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4
UEENEEN028A	Test and commission power signalling equipment	4	1	Relevant work place requirements in 'Work site protection' have been acquired.	S4

P – Restricted and specialist electrical work units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply	3	4	Competencies needed for hot waters servicing, pool servicing, mechanical maintenance, appliance servicing, emergency services and equipment repair.	UEE 3 05 06; UEE 3 06 06; UEE 3 07 06: UEE 3 13 06; S3
UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 volt supply	2	2	None	UEE 3 05 06; UEE 3 13 06; S2
UEENEEP003A	Attach cords and plugs to electrical equipment for	2	1	P002A;	UEE 3 05 06; UEE 3 13 06;

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National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
	connection to 1000 Va.c. or 1500 Vd.c. supply				S2
UEENEEP004A	Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply	3	3	P001A;	S3
UEENEEP005A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles	3	3	Competencies needed for mechanical maintenance of HV electric propulsion components off-road earth moving trucks.	S3
UEENEEP006A	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply	2	2	P003A;	S2
UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures	3	1	P001A;	UEE 3 05 06; UEE 3 13 06; S3
UEENEEP008A	Conduct in-service safety testing of electrical cord assemblies and cord connected equipment	2	1	None	S2

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R – Research units

National Code	Title	AQF	Strand	Prerequisites (All units have a prefix UEENEE) (for relevant prerequisite refer respective unit)	Qualifications
UEENEER001A	Contribute to the planning of a research project	5/6	6	None	UEE 5 08 06; S5; S6
UEENEER002A	Contribute to the conduct of a research project	5/6	6	None	UEE 5 08 06; S5; S6
UEENEER003A	Contribute to the development of a product/application/service	5/6	6	None	UEE 5 08 06; S5; S6
UEENEER004A	Contribute to the trial of a product/application/service	5/6	6	None	UEE 5 08 06; S5; S6
UEENEER005A	Contribute to intellectual property management	5/6	6	None	UEE 5 08 06; S5; S6
UEENEER006A	Contribute to the commercialisation of a product/application/service	5/6	6	None	UEE 5 08 06; S5; S6

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1.2.9 Relationship of revised Electrotechnology CSUs to former Training Package

What follows is a guide to assist RTOs in granting equivalent units when implementing this Training Package.

Note:

1. The alignment of more than one UEE unit to a UTE unit does not necessarily mean that the one UTE unit is equivalent to all aligned UEE units.
2. RTOs shall ensure appropriate analysis of all the skills and knowledge specified in the respective competency standard units in this Training Package is undertaken with that of the former Training Package (UTE99), in determining equivalence.
3. In granting an equivalence of an UEE unit for a UTE unit:
   - the prerequisite units specified for the UEE unit shall be included
   - the critical aspects of evidence of the UEE unit and its specified prerequisite units shall be at least equal to that of the UTE unit.

Table 3 shows the relationship of UEE06 units to the previous Training Package UTE99.

Table 3 – Relationship of UEE06 Electrotechnology CSUs to UTE99 units

CSUs in Electrotechnology Training Package UTE99		**CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)**		**Equivalent – Full, part or not**
UTE NES001A A	Undertake basic work activities (*Computer systems*)	UEENEEE022A	Carry out preparatory electrotechnology work activities	Full – for the category
UTE NES001B A	Undertake basic work activities (*Electrical*)	UEENEEE022A	Carry out preparatory electrotechnology work activities	Full – for the category
UTE NES001C A	Undertake basic work activities (*Electronics*)	UEENEEE022A	Carry out preparatory electrotechnology work activities	Full – with the relevant category
UTE NES001D A	Undertake basic work activities (*Instrumentation*)	UEENEEE022A	Carry out preparatory electrotechnology work activities	Full – with the relevant category

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES001E A	Undertake basic work activities (*Refrigeration and a/conditioning*)	UEENEEE022A	Carry out preparatory electrotechnology work activities	Full – with the relevant category
UTE NES001FA	Undertake basic work activities (*Data Communications*)	UEENEEE022A	Carry out preparatory electrotechnology work activities	Full – with the relevant category
UTE NES002 A	Attend to breakdown		Incorporated in units covering fault find and repair	–
UTE NES003 A	Transport apparatus and materials	UEENEEE051A	Transport apparatus and materials	Full
UTE NES004 A	Operate plant, machinery and equipment		Incorporated in units covering install repair	–
UTE NES006 A	Estimate projects	UEENEEC005A	Estimate electrotechnology projects	Full
UTE NES007 A	Supply projects	UEENEEC002A	Source and purchase material/parts for installation or service jobs	Full
UTE NES008 A	Provide technical leadership in the workplace	UEENEEE014A	Supervise and coordinate work activities, (In context of relevant technical units)	Full – in context if relevant technical units
UTE NES009 A	Participate in the training of others		No alignment	Not
UTE NES010 A	Report on the integrity of explosion-protected equipment in hazardous areas	UEENEEM001A	Report on the integrity of explosion-protected equipment in hazardous areas	Full
UTE NES011 A	Monitor energy usage in an electrotechnology context		Incorporated in units covering sustainable energy.	–

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES012T A	Attend to breakdowns in hazardous areas (*Ex mixed*)	UEENEEM002A	Attend to breakdowns in hazardous areas	Full – with the relevant category
UTE NES012U A	Attend to breakdowns in hazardous areas (*Ex p*)	UEENEEM002A	Attend to breakdowns in hazardous areas	Full – with the relevant category
UTE NES012V A	Attend to breakdowns in hazardous areas (*Dip*)	UEENEEM002A	Attend to breakdowns in hazardous areas	Full – with the relevant category
UTE NES012W A	Attend to breakdowns in hazardous areas (*Ex n*)	UEENEEM002A	Attend to breakdowns in hazardous areas	Full – with the relevant category
UTE NES012X A	Attend to breakdowns in hazardous areas (*Ex i*)	UEENEEM002A	Attend to breakdowns in hazardous areas	Full – with the relevant category
UTE NES012Y A	Attend to breakdowns in hazardous areas (*Ex e*)	UEENEEM002A	Attend to breakdowns in hazardous areas	Full – with the relevant category
UTE NES012Z A	Attend to breakdowns in hazardous areas (*Ex d*)	UEENEEM002A	Attend to breakdowns in hazardous areas	Full – with the relevant category
UTE NES013 A	Monitor a remote area essential services operation	UEENEEK016A	Monitor a remote area essential services operation	Full
UTE NES014N A	Undertake basic office/warehouse administration (*Administration*)		No alignment	–
UTE NES014Q A	Undertake basic office/warehouse administration (*Wholesaling*)		No alignment	–
UTE NES015N A	Promote basic organisational services/products (*Administration*)	UEENEEC012A	Direct technical and non-technical enquiries to appropriate personnel	Full – with the relevant specialisation

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES015Q A	Promote basic organisational services/products (*Wholesaling*)	UEENEEC012A	Direct technical and non-technical enquiries to appropriate personnel	Full – with the relevant specialisation
UTE NES016 A	Promote detailed organisational services/products	UEENEEC012A	Direct technical and non-technical enquiries to appropriate personnel	Part
UTE NES017 A	Project tendering	UEENEEC006A	Prepare tender submissions for electrotechnology projects	Full
UTE NES018 A	Assemble and disassemble scaffolding to enable access to the work area		No alignment	–
UTE NES019 A	Perform rigging of heavy loads to facilitate placement and the assembly of apparatus		No alignment	–
UTE NES023 A	Apply contracting and estimating procedures	UEENEEG014A	Develop plans and compliance policies to conduct a contracting business	Part
		UEENEEG005A	Verify compliance and functionality of general electrical installations	Part
UTE NES050 A	Identify and select components/accessories/materials for Electrotech work activities	UEENEEE040A	Identify and select materials for electrotechnology work activities	Full
UTE NES051 A	Use of routine equipment/plant/technologies in an Electrotech environment	UEENEEE041A	Use of routine equipment/plant/technologies in an electrotechnology environment	Full

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES052 A	Interact with customers/clients for quality service	UEENEEC010A	Deliver a service to customers	Full
UTE NES053 A	Participate in job data records collection of the business	UEENEEC001A	Maintain documentation	Full
UTE NES054 A	Produce routine products for carrying out Electrotech work activities	UEENEEE042A	Produce routine products for carrying out electrotechnology work activities	Full
UTE NES055 A	Produce routine tools/devices for carrying out Electrotech work activities	UEENEEE043A	Produce routine tools/devices for carrying out electrotechnology work activities	Full
UTE NES056 A	Apply technologies and concepts to Electrotech work activities	UEENEEE044A	Apply technologies and concepts to electrotechnology work activities	Full
UTE NES057 A	Apply computation when using equipment/materials/ concepts in an Electrotech environment	UEENEEE045A	Apply computation when using equipment, materials and concepts in an electrotechnology environment	Full
UTE NES058 A	Identify affects of energy on machinery/materials in an Electrotech environment	UEENEEE046A	Identify affects of energy on machinery and materials in an electrotechnology environment	Full
UTE NES059 A	Identify building techniques, methods and materials used in Electrotech works activities	UEENEEE047A	Identify building techniques, methods and materials used in electrotechnology work activities	Full
UTE NES060 A	Carry out routine work activities in an Electrotech environment	UEENEEE048A	Carry out routine work activities in an electrotechnology environment	Full

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES061 A	Provide basic sustainable energy solutions for energy reduction in domestic premises	UEENEEK012A	Provide basic sustainable energy solutions for energy reduction in domestic premises	Full
UTE NES062 A	Apply sustainable energy practice in daily activities	UEENEEK013A	Apply sustainable energy practice in daily activities	Full
UTE NES063 A	Contribute to the operation of support plant and equipment used in Electricity Supply	UEENEEE049A	Contribute to the operation of support plant and equipment used in electricity supply	Full
UTE NES064 A	Undertake computations in an Electrotechnology environment	UEENEEE050A	Undertake computations in an electrotechnology environment	Full
UTE NES065 A	Promote sustainable energy practice in the community	UEENEEK014A	Promote sustainable energy practice in the community	Full
UTE NES101 A	Install pre-assembled neon signs	UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply	Part
UTE NES102C A	Assemble and erect antennae and associated hardware (*Electronics*)	UEENEEH008A	Assemble and erect reception antennae and signal distribution equipment	Full
UTE NES103B A	Install/maintain piping and tubing (*Electrical*)	UEENEEI007A (In part only)	Install process instrumentation and control cabling and tubing	Part
UTE NES103E A	Install/maintain piping and tubing (*Refrigeration and a/conditioning*)	UEENEEJ006A	Install pipework for refrigeration and air conditioning systems	Full
UTE NES104 A	Install and maintain energy management equipment		Incorporated in units covering integrated systems and energy use.	–

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES105G A	Install and terminate wiring systems (*Cabling/wiring support and protection*)	UEENEEE005A	Fix and secure equipment	Part
UTE NES105H A	Install and terminate wiring systems (*Network communications*)	UEENEEF002A	Lay and connect cables for multiple access to telecommunication services	Full
UTE NES105I A	Install and terminate wiring systems (*Power and control – extra low voltage*)	UEENEEE008A	Lay cabling/wiring and terminate accessories for extra-low voltage circuits	Full – with the relevant category
		UEENEEI007A (In part only)	Install process instrumentation and control cabling and tubing	Part
UTE NES105J A	Install and terminate wiring systems (*Power and control – low voltage*)	UEENEEG003A	Install wiring and accessories for low voltage circuits	Full – with the relevant category
UTE NES106A A	Install electrical/electronic apparatus (*Computer systems*)	UEENEED002A	Assemble, set up and test personal computers	Full – with the relevant category
UTE NES106B A	Install electrical/electronic apparatus (*Electrical*)	UEENEEG004A	Install low voltage electrical apparatus and associated equipment	Full – with the relevant category
UTE NES106C A	Install electrical/electronic apparatus (*Electronics*)	UEENEEH006A	Assemble and set up fixed audio/video components and systems in buildings and premises	Full – with relevant category and range
		UEENEEH010A	Install commercial audio/video system components	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEH050A	Assemble and set up basic wired and wireless security systems	Full – with relevant category and range
		UEENEEH051A	Install large wired and wireless security systems	Full – with relevant category and range
		UEENEEH061A	Position and terminate fire detection and warning system apparatus	Full – with relevant category and range
UTE NES106D A	Install electrical/electronic apparatus (*Instrumentation*)	UEENEEI001A	Install and set up transducers and sensing devices	Full – with relevant category and range
		UEENEEI008A	Install process control apparatus and associated equipment	Full – with relevant category and range
UTE NES106E A	Install electrical/electronic apparatus (*Refrigeration and a/conditioning*)	UEENEEJ007A	Install refrigeration and air conditioning systems, major components and associated equipment	Full – with relevant category and range
UTE NES106F A	Install electrical/electronic apparatus (*Data communications*)	UEENEEF009A	Install and connect voice and data communications equipment	Full – with relevant category and range
UTE NES107T A	Install explosion-protected equipment and wiring systems (*Ex mixed*)	UEENEEM004B	Install explosion-protected equipment and wiring systems	Full – with relevant category and range
UTE NES107U A	Install explosion-protected equipment and wiring systems (*Ex p*)	UEENEEM004B	Install explosion-protected equipment and wiring systems	Full – with relevant category and range
UTE NES107V A	Install explosion-protected equipment and wiring systems (*Dip*)	UEENEEM004B	Install explosion-protected equipment and wiring systems	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES107W A	Install explosion-protected equipment and wiring systems (*Ex n*)	UEENEEM004B	Install explosion-protected equipment and wiring systems	Full – with relevant category and range
UTE NES107X A	Install explosion-protected equipment and wiring systems (*Ex i*)	UEENEEM004B	Install explosion-protected equipment and wiring systems	Full – with relevant category and range
UTE NES107Y A	Install explosion-protected equipment and wiring systems (*Ex e*)	UEENEEM004B	Install explosion-protected equipment and wiring systems	Full – with relevant category and range
UTE NES107Z A	Install explosion-protected equipment and wiring systems (*Ex d*)	UEENEEM004B	Install explosion-protected equipment and wiring systems	Full – with relevant category and range
UTE NES108 A	Install overhead communications cables	UEENEEF012A	Install aerial communication cables	Full
UTE NES109 A	Install below ground communications cables	UEENEEF013A	Install below ground communication cables	Full
UTE NES110 A	Install and maintain fluid measurement equipment	UEENEEI003A	Solve problems in density/level measurement systems	Part
		UEENEEI004A	Solve problems in flow measurement systems	Part
		UEENEEI008A	Install process control apparatus and associated equipment	Full – with relevant category and range
UTE NES111 A	Assembly processes	UEENEEA001A	Assemble electronic apparatus	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES112 A	Install and maintain photovoltaic arrays	UEENEEK024A	Assemble and set up photovoltaic apparatus in domestic dwellings	Full
UTE NES113 A	Install and maintain a micro-hydro system	UEENEEK037A	Install and set up micro-hydro systems	Full
UTE NES114 A	Install and maintain a small wind energy conversion system	UEENEEK028A	Solve problems in stand-alone renewable energy systems	Part
UTE NES115 A	Install and maintain a grid connected inverter system	UEENEEK025A	Solve basic problems in photovoltaic energy apparatus	Part
UTE NES120 A	Install consumer video systems	UEENEEH004A	Set up and test audio/video equipment	Full – with relevant category and range
UTE NES201A B	Perform basic repair to electrical/electronic apparatus (*Computer systems*)	UEENEED002A	Assemble, set up and test personal computers	Part – with relevant category and range
UTE NES201B B	Perform basic repair to electrical/electronic apparatus (*Electrical*)	UEENEEG011A	Carry out basic repairs to electrical apparatus	Part – with relevant category and range
		UEENEEJ051A	Service small appliances and power tools	Part – with relevant category and range
UTE NES201C B	Perform basic repair to electrical/electronic apparatus (*Electronics*)	UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components	Part – with relevant category and range
UTE NES201E B	Perform basic repair to electrical/electronic apparatus (*Refrigeration and a/conditioning*)		No direct alignment	–

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES201F B	Perform basic repair to electrical/electronic apparatus (*Data communications*)		No direct alignment	–
UTE NES202A B	Assemble/disassemble electrical/electronic components (*Computer systems*)	UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components. (In context of relevant technical units)	Full – with relevant category and range
UTE NES202B B	Assemble/disassemble electrical/electronic components (*Electrical*)	UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components. (In context of relevant technical units)	Full – with relevant category and range
UTE NES202C B	Assemble/disassemble electrical/electronic components (*Electronics*)	UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components. (In context of relevant technical units)	Full – with relevant category and range
UTE NES202E B	Assemble/disassemble electrical/electronic components (*Refrigeration and a/conditioning*)	UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components. (In context of relevant technical units)	Full – with relevant category and range
UTE NES202F B	Assemble/disassemble electrical/electronic components (*Data communications*)	UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components. (In context of relevant technical units)	Full – with relevant category and range
UTE NES203B A	Assemble electrical/electronic apparatus (*Electrical*)	UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components. (In context of relevant technical units)	Full – with relevant category and range
UTE NES204 A	Control vegetation		Refer to Transmission, Distribution and Rail Systems Training Package (UET05)	–

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES205K B	Conduct powerline switching (*Low voltage switching*)		Refer to Transmission, Distribution and Rail Systems Training Package (UET05)	–
UTE NES205L B	Conduct powerline switching (*High voltage switching)*	UETTDRIS04A	Perform high voltage field switching operation to a given schedule	Part – with relevant category and range
UTE NES205M B	Conduct powerline switching (*System switching*)		Refer to Transmission, Distribution and Rail Systems Training Package (UET05)	–
UTE NES206A A	Maintain[1] and repair apparatus and circuits (*Computer systems*)	UEENEE D012A	Support computers hardware and software	Full – with relevant category and range
UTE NES206B A	Maintain and repair apparatus and circuits (*Electrical*)	UEENEEG008A (In part only)	Find and repair faults in electrical apparatus and circuits	Part – with relevant category and range
UTE NES206C B	Maintain and repair apparatus and circuits (*Electronics*)	UEENEEH007A (In part only)	Carry out repairs of predictable faults in general electronic apparatus	Part – with relevant category and range
		UEENEEH017A (In part only)	Carry out repairs of predictable faults in audio and video replay/recording apparatus	Part – with relevant category and range
		UEENEEH018A (In part only)	Find and repair faults in electronic apparatus	Part – with relevant category and range
		UEENEEH019A (In part only)	Carry out repairs of predictable faults in television receivers	Part – with relevant category and range
		UEENEEH020A (In part only)	Find and repair faults in gaming and games equipment	Part – with relevant category and range
		UEENEEH021A (In part only)	Find and repair faults in high volume office equipment	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEH022A (In part only)	Find and repair faults in remote control apparatus	Part – with relevant category and range
		UEENEEH023A (In part only)	Find and repair faults in microwave heating apparatus	Part – with relevant category and range
		UEENEEH024A (In part only)	Carry out repairs of predictable faults in audio components	Part – with relevant category and range
		UEENEEH065A (In part only)	Find and repair faults in fire protection systems	Part – with relevant category and range
		UEENEEH066A (In part only)	Fault find micro-controller based hardware	Part – with relevant category and range
		UEENEEH071A (In part only)	Find and repair faults in television receivers	Part – with relevant category and range
		UEENEEH072A (In part only)	Find and repair faults in the RF sections of electronic apparatus	Part – with relevant category and range
		UEENEEH073A (In part only)	Find and repair faults in professional audio reproduction components	Part – with relevant category and range
		UEENEEH074A (In part only)	Find and repair faults in audio/video recording equipment	Part – with relevant category and range
		UEENEEH075A (In part only)	Find and rectify faults and malfunctions in security system installations	Part – with relevant category and range
UTE NES206D A	Maintain and repair apparatus and circuits (*Instrumentation*)	UEENEEI011A (In part only)	Find and rectify faults in process control valve and associated equipment	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEI014A (In part only)	Find and rectify faults in process control systems	Part – with relevant category and range
UTE NES206E A	Maintain and repair apparatus and circuits (*Refrigeration and a/conditioning*)	UEENEEJ011A (In part only)	Diagnose and rectify faults in refrigeration and air conditioning systems and components	Part – with relevant category and range
UTE NES206F A	Maintain and repair apparatus and circuits (*Data communications*)	UEENEEF011A	Test, report and rectify faults in voice and data installations	Full – with relevant category and range
UTE NES207A A	Co–ordinate maintenance of apparatus and systems' circuits (*Computer systems*)	UEENEEE014A	Supervise and coordinate work activities, (In context of relevant technical units)	Full – with relevant category and range
UTE NES207B A	Coordinate maintenance of apparatus and systems' circuits (*Electrical*)	UEENEEE014A	Supervise and coordinate work activities, (In context of relevant technical units)	Full – with relevant category and range
UTE NES207C A	Coordinate maintenance of apparatus and systems' circuits (*Electronics*)	UEENEEE014A	Supervise and coordinate work activities, (In context of relevant technical units)	Full – with relevant category and range
UTE NES207D A	Coordinate maintenance of apparatus and systems' circuits (*Instrumentation*)	UEENEEE014A	Supervise and coordinate work activities, (In context of relevant technical units)	Full – with relevant category and range
UTE NES207E A	Coordinate maintenance of apparatus and systems' circuits (*Refrigeration and a/conditioning*)	UEENEEE014A	Supervise and coordinate work activities, (In context of relevant technical units)	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES208N A	Disconnect and reconnect fixed wired electrical equipment 1,000Vac/1500Vdc (*Pre–assembled neon signs*)	UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply	Full – with relevant category and range
UTE NES208P A	Disconnect and reconnect fixed wired electrical equipment 1,000Vac/1500Vdc (*Single enclosed c/device*)	UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply	Full – with relevant category and range
UTE NES208Q A	Disconnect and reconnect fixed wired electrical equipment 1,000Vac/1500Vdc (*Control devices*)	UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply	Full – with relevant category and range
UTE NES208R A	Disconnect and reconnect fixed wired electrical equipment 1,000Vac/1500Vdc (*Electrical heaters)*	UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply	Full – with relevant category and range
UTE NES208S A	Disconnect and reconnect fixed wired electrical equipment 1,000V ac/1500V dc (*Motors)*	UEENEEP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply	Full – with relevant category and range
UTE NES209N A	Attach flexible cords and plugs to electrical equipment 250 volt supply (*Pre–assembled neon signs*)	UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES209P A	Attach flexible cords and plugs to electrical equipment 250 volt supply (*Single enclosed c/device*)	UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply	Full – with relevant category and range
UTE NES209Q A	Attach flexible cords and plugs to electrical equipment 250 volt supply (*Control devices*)	UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply	Full – with relevant category and range
UTE NES209R A	Attach flexible cords and plugs to electrical equipment 250 volt supply (*Electrical heaters)*	UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply	Full – with relevant category and range
UTE NES209S A	Attach flexible cords and plugs to electrical equipment 250 volt supply (*Motors)*	UEENEEP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply	Full – with relevant category and range
UTE NES210N A	Attach flexible cords and plugs to electrical equipment 1,000Vac/1500Vdc (*Pre-assembled neon signs*)	UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply	Full – with relevant category and range
UTE NES210P A	Attach flexible cords and plugs to electrical equipment 1,000Vac/1500Vdc (*Single enclosed c/device*)	UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply	Full – with relevant category and range
UTE NES210Q A	Attach flexible cords and plugs to electrical equipment 1,000Vac/1500Vdc (*Control devices*)	UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES210R A	Attach flexible cords and plugs to electrical equipment 1,000Vac/1500Vdc (*Electrical heaters)*	UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply	Full – with relevant category and range
UTE NES210S A	Attach flexible cords and plugs to electrical equipment 1,000Vac/1500Vdc (*Motors)*	UEENEEP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply	Full – with relevant category and range
UTE NES211 A	Disconnect and reconnect explosion-protected electrical equip. connected fixed wired 1,000Vac/1500Vdc	UEENEEP004A	Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply.	Full
UTE NES212 A	Disconnect and reconnect HV electric propulsion components engine driven, earth moving vehicles 3.3kv	UEENEEP005A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles	Full
UTE NES213 A	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply	UEENEEP006A	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply	Full
UTE NES214T A	Maintain equipment in hazardous areas (*Ex mixed*)	UEENEEM006B	Maintain equipment in hazardous areas	Full – with relevant category and range
UTE NES214U A	Maintain equipment in hazardous areas (*Ex p*)	UEENEEM006B	Maintain equipment in hazardous areas	Full – with relevant category and range
UTE NES214V A	Maintain equipment in hazardous areas (*Dip*)	UEENEEM006B	Maintain equipment in hazardous areas	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES214W A	Maintain equipment in hazardous areas (*Ex n*)	UEENEEM006B	Maintain equipment in hazardous areas	Full – with relevant category and range
UTE NES214X A	Maintain equipment in hazardous areas (*Ex i*)	UEENEEM006B	Maintain equipment in hazardous areas	Full – with relevant category and range
UTE NES214Y A	Maintain equipment in hazardous areas (*Ex e*)	UEENEEM006B	Maintain equipment in hazardous areas	Full – with relevant category and range
UTE NES214Z A	Maintain equipment in hazardous areas (*Ex d*)	UEENEEM006B	Maintain equipment in hazardous areas	Full – with relevant category and range
UTE NES215T A	Overhaul and repair explosion–protected equipment (*Ex mixed*)	UEENEEM007B	Overhaul and repair explosion-protected equipment	Full – with relevant category and range
UTE NES215U A	Overhaul and repair explosion-protected equipment (*Ex p*)	UEENEEM007B	Overhaul and repair explosion-protected equipment	Full – with relevant category and range
UTE NES215V A	Overhaul and repair explosion-protected equipment (*Dip*)	UEENEEM007B	Overhaul and repair explosion-protected equipment	Full – with relevant category and range
UTE NES215W A	Overhaul and repair explosion-protected equipment (*Ex n*)	UEENEEM007B	Overhaul and repair explosion-protected equipment	Full – with relevant category and range
UTE NES215X A	Overhaul and repair explosion-protected equipment (*Ex i*)	UEENEEM007B	Overhaul and repair explosion-protected equipment	Full – with relevant category and range
UTE NES215Y A	Overhaul and repair explosion-protected equipment (*Ex e*)	UEENEEM007B	Overhaul and repair explosion-protected equipment	Full – with relevant category and range
UTE NES215Z A	Overhaul and repair explosion-protected equipment (*Ex d*)	UEENEEM007B	Overhaul and repair explosion-protected equipment	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES216 A	Perform basic servicing to plant/equipment associated with remote area essential services operation	UEENEEK017A	Maintain and repair facilities associated with remote area essential services operation	Full – with relevant category and range
UTE NES217 A	Maintain environmental conditions of a remote area utilities operation	UEENEEK017A	Maintain and repair facilities associated with remote area essential services operation	Full – with relevant category and range
UTE NES218 A	Maintain office records and administrative systems	UEENEEC001A	Maintain documentation	Full – with relevant category and range
UTE NES219 A	Coordinate maintenance of renewable energy apparatus and systems	UEENEEK010A	Coordinate maintenance of renewable energy apparatus and systems	Full – with relevant category and range
UTE NES220 A	Maintain and repair digital televisions	UEENEEH079A	Diagnose and rectify faults in digital television apparatus	Full – with relevant category and range
UTE NES301A A	Undertake commissioning of apparatus and circuits (*Computer systems*)	UEENEED046A (In part only)	Set up and configure basic local area network	Part – with relevant category and range
UTE NES301B A	Undertake commissioning of apparatus and circuits (*Electrical*)	UEENEEG005A	Verify compliance and functionality of general electrical installations	Part – with relevant category and range
		UEENEEG021A	Verify compliance and functionality of special electrical installations	Part – with relevant category and range
		UEENEEG062A	Set up and place electrical apparatus and associated circuits into service	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES301C A	Undertake commissioning of apparatus and circuits (*Electronics*)	UEENEEH004A	Set up and test audio/video equipment	Part – with relevant category and range
		UEENEEH005A	Verify compliance and functionality of custom electronic installations	Part – with relevant category and range
		UEENEEH009A	Set up and test gaming/games equipment	Part – with relevant category and range
\UTE NES301D A	Undertake commissioning of apparatus and circuits (*Instrumentation*)	UEENEEI001A	Install and set up transducers and sensing devices	Part – with relevant category and range
		UEENEEI009A	Set up process measuring and control instruments	Part – with relevant category and range
		UEENEEI010A	Set up and adjust process control loops	Part – with relevant category and range
		UEENEEI012A	Verify compliance and functionality of process control installations	Part – with relevant category and range
		UEENEEI019A	Set up field control devices	Part – with relevant category and range
UTE NES301E A	Undertake commissioning of apparatus and circuits (*Refrigeration and a/conditioning*)	UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEJ013A	Commission refrigeration and air conditioning systems	Part – with relevant category and range
UTE NES301F A	Undertake commissioning of apparatus and circuits (*Data Communications*)	UEENEEF011A	Test, report and rectify faults in voice and data installations	Part – with relevant category and range
UTE NES302A A	Undertake commissioning of apparatus and complex circuits (*Computer systems*)	UEENEED015A	Administer user networks	Part – with relevant category and range
UTE NES302B A	Undertake commissioning of apparatus and complex circuits (*Electrical*)	UEENEEI022A	Assist in commissioning process control systems	Part – with relevant category and range
UTE NES302C A	Undertake commissioning of apparatus and complex circuits (*Electronics*)	UEENEEH027A	Commission commercial radio frequency (RF) transmission and reception systems	Part – with relevant category and range
		UEENEEH054A	Program and commission commercial security alarm systems	Part – with relevant category and range
		UEENEEH055A	Program and commission commercial security access control systems	Part – with relevant category and range
		UEENEEH056A	Program and commission commercial security closed circuit television (CCTV) systems	Part – with relevant category and range
		UEENEEH064A	Commission commercial fire protection systems	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEH053A	Program and test large wired and wireless security systems	Part – with relevant category and range
UTE NES302D A	Undertake commissioning of apparatus and complex circuits (*Instrumentation*)	UEENEEI022A	Assist in commissioning process control systems	Full – with relevant category and range
UTE NES302E A	Undertake commissioning of apparatus and complex circuits (*Refrigeration and a/conditioning*)	UEENEEJ023A	Commission complex heating, ventilation and air conditioning (HVAC) systems	Part – with relevant category and range
		UEENEEJ024A	Commission hydronic systems for refrigeration and air conditioning systems	Part – with relevant category and range
		UEENEEJ025A	Commission complex refrigeration systems	Part – with relevant category and range
		UEENEEJ026A	Commission complex control systems for refrigeration and air conditioning systems	Part – with relevant category and range
UTE NES303A A	Undertake commissioning of apparatus and systems' circuits (*Computer systems*)	UEENEED018A	Design and implement Internetworking systems	Part – with relevant category and range
UTE NES303B A	Undertake commissioning of apparatus and systems' circuits (*Electrical*)		Incorporated in units covering diagnosis and verification	–
UTE NES303C A	Undertake commissioning of apparatus and systems' circuits (*Electronics*)	UEENEEH027A	Commission commercial radio frequency (RF) transmission and reception systems	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEH064A	Commission commercial fire protection systems	Part – with relevant category and range
UTE NES303D A	Undertake commissioning of apparatus and systems' circuits (*Instrumentation*)	UEENEEI022A	Assist in commissioning process control systems	Part – with relevant category and range
UTE NES303E A	Undertake commissioning of apparatus and systems' circuits (*Refrigeration and a/conditioning*)	UEENEEJ023A	Commission complex heating, ventilation and air conditioning (HVAC) systems	Part – with relevant category and range
		UEENEEJ024A	Commission hydronic systems for refrigeration and air conditioning	Part – with relevant category and range
UTE NES304A A	Undertake commissioning of advanced systems and apparatus *(Computer systems)*		No alignment	–
UTE NES304B A	Undertake commissioning of advanced systems and apparatus (*Electrical*)		No alignment	–
UTE NES304C A	Undertake commissioning of advanced systems and apparatus (*Electronics*)		No alignment	–
UTE NES304D A	Undertake commissioning of advanced systems and apparatus (*Instrumentation*)	UEENEEI028A	Set up controls on complex fluid systems	Part – with relevant category and range
		UEENEEI029A	Set up electronically controlled mechanically operated complex systems	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEI030A	Set up electronically controlled robotically operated complex systems	Part – with relevant category and range
UTE NES305 A	Undertake commissioning procedures of renewable energy apparatus and systems	UEENEEK030A (In part only)	Commission stand-alone photovoltaic power systems	Part – with relevant category and range
UTE NES401A B	Perform functional apparatus checks (*Computer systems*) (in part only)	UEENEED002A	Assemble, set up and test personal computers	Full – with relevant category and range
UTE NES401B B	Perform functional apparatus checks (*Electrical*)	UEENEEK025A (In part only)	Perform functional checks on renewable energy apparatus	Part – with relevant category and range
			Incorporated in units covering installation and repair	–
UTE NES401C B	Perform functional apparatus checks (*Electronics*)	UEENEEH004A	Set up and test audio/video equipment	Part – with relevant category and range
		UEENEEH009A	Set up and test gaming/games equipment	Part – with relevant category and range
		UEENEEH050A	Assemble and set up basic wired and wireless security systems	Part – with relevant category and range
UTE NES401E B	Perform functional apparatus checks (*Refrigeration and a/conditioning*)		Incorporated in units covering installation and repair (In context of relevant technical units)	–
UTE NES401F B	Perform functional apparatus checks (*Data communications*)		Incorporated in units covering installation and repair	–

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES402A A	Test apparatus and circuits (*Computer systems*)		Incorporated in units covering 'finding and repairing faults'	Part – with relevant category and range
UTE NES402B A	Test apparatus and circuits (*Electrical*) (In part only)	UEENEEG005A	Verify compliance and functionality of general electrical installations	Part – with relevant category and range
		UEENEEG057A	Conduct electrical tests on low voltage electrical machines	Part – with relevant category and range
		UEENEEG059A	Conduct mechanical tests of electrical machines	Part – with relevant category and range
UTE NES402C A	Test apparatus and circuits (*Electronics*)		Incorporated in units covering finding and repairing faults	–
UTE NES402D A	Test apparatus and circuits (*Instrumentation*)	UEENEEI012A	Verify compliance and functionality of process control installations	Part – with relevant category and range
UTE NES402E A	Test apparatus and circuits (*Refrigeration and a/conditioning*) (In part only)	UEENEEJ061A	Verify compliance and functionality of appliances	Part – with relevant category and range
			Incorporated in units covering 'finding and repairing faults'	–
UTE NES402F A	Test apparatus and circuits (*Data communications*)		Incorporated in units covering 'finding and repairing faults'	–
UTE NES403A A	Test apparatus and complex circuits (*Computer systems*)		No direct alignment	–

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES403B A	Test apparatus and complex circuits (*Electrical*)	UEENEEG032A	Carry out electrical field testing and report findings	Part – with relevant category and range
		UEENEEG058A	Conduct electrical tests on high voltage electrical machines	Part – with relevant category and range
			Incorporated in units covering 'diagnosis and rectification of faults'	–
UTE NES403C A	Test apparatus and complex circuits (*Electronics*)		Incorporated in units covering 'diagnosis and rectification of faults'	–
UTE NES403D A	Test apparatus and complex circuits (*Instrumentation*)		Incorporated in units covering 'diagnosis and rectification of faults'	–
UTE NES403E A	Test apparatus and complex circuits (*Refrigeration and a/conditioning*)		Incorporated in units covering 'diagnosis and rectification of faults'	–
UTE NES404A A	Assess electrical/electronic apparatus (*Computer systems*)		No direct alignment	–
UTE NES404B A	Assess electrical/electronic apparatus (*Electrical*)	UEENEEG031A	Assess compliance of electrical apparatus	Full – with relevant category and range
		UEENEEG060A	Evaluate performance of electrical machines	Full – with relevant category and range
UTE NES404C A	Assess electrical/electronic apparatus (*Electronics*)	UEENEEH047A	Assess compliance of electronic apparatus	Full – with relevant category and range
UTE NES404D A	Assess electrical/electronic apparatus (*Instrumentation*)		No alignment	–

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES404E A	Assess electrical/electronic apparatus (*Refrigeration and a/conditioning*)	UEENEEJ036A	Evaluate and report on energy management	Full – with relevant category and range
		UEENEEJ037A	Evaluate and report on air quality in buildings	Full – with relevant category and range
		UEENEEJ063A	Analyse the psychrometric performance of HVAC/R systems	Full – with relevant category and range
		UEENEEJ064A	Analyse the operation of HVAC/R systems	Full – with relevant category and range
UTE NES405 A	Inspect electrical/electronic apparatus and circuits	UEENEEG022A	Conduct compliance inspection of single phase electrical installations	Full – with relevant category and range
		UEENEEG023A	Conduct compliance inspection of electrical installations with demand exceeding 100A per phase	Full – with relevant category and range
		UEENEEG024A	Conduct compliance inspection of special electrical installations	Full – with relevant category and range
UTE NES406A A	Develop complex testing and evaluation procedures (*Computer systems*)		Incorporated in higher level units covering design and development	–
UTE NES406B A	Develop complex testing and evaluation procedures (*Electrical*)		Incorporated in higher level units covering design and development	–
UTE NES406C A	Develop complex testing and evaluation procedures (*Electronics*)		Incorporated in higher level units covering design and development	–

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES406D A	Develop complex testing and evaluation procedures (*Instrumentation*)		Incorporated in higher level units covering design and development	–
UTE NES407T A	Assess explosion-protected equipment for conformance with standards(*Ex mixed*)	UEENEEM008B	Assess explosion-protected equipment for compliance with standards	Full – with relevant category and range
UTE NES407U A	Assess explosion-protected equipment for conformance with standards(*Ex p*)	UEENEEM008B	Assess explosion-protected equipment for compliance with standards	Full – with relevant category and range
UTE NES407V A	Assess explosion-protected equipment for conformance with standards(*Dip*)	UEENEEM008B	Assess explosion-protected equipment for compliance with standards	Full – with relevant category and range
UTE NES407W A	Assess explosion-protected equipment for conformance with standards(*Ex n*)	UEENEEM008B	Assess explosion-protected equipment for compliance with standards	Full – with relevant category and range
UTE NES407X A	Assess explosion-protected equipment for conformance with standards(*Ex i*)	UEENEEM008B	Assess explosion-protected equipment for compliance with standards	Full – with relevant category and range
UTE NES407Y A	Assess explosion-protected equipment for conformance with standards(*Ex e*)	UEENEEM008B	Assess explosion-protected equipment for compliance with standards	Full – with relevant category and range
UTE NES407Z A	Assess explosion-protected equipment for conformance with standards(*Ex d*)	UEENEEM008B	Assess explosion-protected equipment for compliance with standards	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES408T A	Test installations in hazardous areas (*Ex mixed*)	UEENEEM009B	Test installations in hazardous areas	Full – with relevant category and range
UTE NES408U A	Test installations in hazardous areas (*Ex p*)	UEENEEM009B	Test installations in hazardous areas	Full – with relevant category and range
UTE NES408V A	Test installations in hazardous areas (*Dip*)	UEENEEM009B	Test installations in hazardous areas	Full – with relevant category and range
UTE NES408W A	Test installations in hazardous areas (*Ex n*)	UEENEEM009B	Test installations in hazardous areas	Full – with relevant category and range
UTE NES408X A	Test installations in hazardous areas (*Ex i*)	UEENEEM009B	Test installations in hazardous areas	Full – with relevant category and range
UTE NES408Y A	Test installations in hazardous areas (*Ex e*)	UEENEEM009B	Test installations in hazardous areas	Full – with relevant category and range
UTE NES408Z A	Test installations in hazardous areas (*Ex d*)	UEENEEM009B	Test installations in hazardous areas	Full – with relevant category and range
UTE NES409T A	Inspect visually existing hazardous area installations (*Ex mixed*)	UEENEEM010B	Conduct close inspection of existing hazardous areas installations	Full – with relevant category and range
UTE NES409U A	Inspect visually existing hazardous area installations (*Ex p*)	UEENEEM010B	Conduct close inspection of existing hazardous areas installations	Full – with relevant category and range
UTE NES409V A	Inspect visually existing hazardous area installations (*Dip*)	UEENEEM010B	Conduct close inspection of existing hazardous areas installations	Full – with relevant category and range
UTE NES409W A	Inspect visually existing hazardous area installations (*Ex n*)	UEENEEM010B	Conduct close inspection of existing hazardous areas installations	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES409X A	Inspect visually existing hazardous area installations (*Ex i*)	UEENEEM010B	Conduct close inspection of existing hazardous areas installations	Full – with relevant category and range
UTE NES409Y A	Inspect visually existing hazardous area installations (*Ex e*)	UEENEEM010B	Conduct close inspection of existing hazardous areas installations	Full – with relevant category and range
UTE NES409Z A	Inspect visually existing hazardous area installations (*Ex d*)	UEENEEM010B	Conduct close inspection of existing hazardous areas installations	Full – with relevant category and range
UTE NES410T A	Inspect in detail hazardous area installations (*Ex mixed*)	UEENEEM011B	Conduct detailed inspection of hazardous areas installations	Full – with relevant category and range
UTE NES410U A	Inspect in detail hazardous area installations (*Ex p*)	UEENEEM011B	Conduct detailed inspection of hazardous areas installations	Full – with relevant category and range
UTE NES410V A	Inspect in detail hazardous area installations (*Dip*)	UEENEEM011B	Conduct detailed inspection of hazardous areas installations	Full – with relevant category and range
UTE NES410W A	Inspect in detail hazardous area installations (*Ex n*)	UEENEEM011B	Conduct detailed inspection of hazardous areas installations	Full – with relevant category and range
UTE NES410X A	Inspect in detail hazardous area installations (*Ex i*)	UEENEEM011B	Conduct detailed inspection of hazardous areas installations	Full – with relevant category and range
UTE NES410Y A	Inspect in detail hazardous area installations (*Ex e*)	UEENEEM011B	Conduct detailed inspection of hazardous areas installations	Full – with relevant category and range
UTE NES410Z A	Inspect in detail hazardous area installations (*Ex d*)	UEENEEM011B	Conduct detailed inspection of hazardous areas installations	Full – with relevant category and range
UTE NES411 A	Assess renewable energy apparatus and systems	UEENEEK032A	Develop strategies to address sustainability issues	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES412 A	Test renewable energy apparatus and systems	UEENEEK027A	Diagnose faults in renewable energy control systems	Full – with relevant category and range
UTE NES413 A	Reduce the energy consumption within a building	UEENEEK041A	Develop strategies for effective energy reduction in buildings	Full – with relevant category and range
UTE NES414 A	Program and verify programmable controllers	UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set	Full – with relevant category and range
UTE NES415 A	Program and verify programmable controller systems	UEENEED009A	Develop, enter and verify programs for industrial control systems using high level instructions	Full – with relevant category and range
UTE NES501A A	Diagnose and rectify faults in apparatus and circuits (*Computer systems*)	UEENEED012A	Support computers hardware and software	Part – with relevant category and range
UTE NES501B A	Diagnose and rectify faults in apparatus and circuits (*Electrical*)	UEENEEG008A	Find and repair faults in electrical apparatus and circuits	Part – with relevant category and range
		UEENEEG010A	Find and repair faults in d.c. electrical apparatus and circuits	Part – with relevant category and range
		UEENEEG015A	Find and rectify faults in energy supply network equipment	Part – with relevant category and range
		UEENEEG016A	Diagnose and rectify faults in lifts systems	Part – with relevant category and range
		UEENEEG018A	Maintain operation of electrical mining equipment	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEG019A	Maintain the operation of electrical marine equipment	Part – with relevant category and range
		UEENEEG057A	Conduct electrical tests on low voltage electrical machines	Part – with relevant category and range
		UEENEEG059A	Conduct mechanical tests of electrical machines	Part – with relevant category and range
UTE NES501C A	Diagnose and rectify faults in apparatus and circuits (*Electronics*)	UEENEEH016A	Find and repair faults in the microwave amplifier sections of electronic apparatus	Part – with relevant category and range
		UEENEEH018A	Find and repair faults in electronic apparatus	Part – with relevant category and range
		UEENEEH020A	Find and repair faults in gaming and games equipment	Part – with relevant category and range
		UEENEEH021A	Find and repair faults in high volume office equipment	Part – with relevant category and range
		UEENEEH022A	Find and repair faults in remote control apparatus	Part – with relevant category and range
		UEENEEH023A	Find and repair faults in microwave heating apparatus	Part – with relevant category and range
		UEENEEH038A	Find and repair faults in complex power supplies	Part – with relevant category and range
		UEENEEH065A	Find and repair faults in fire protection systems	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEH071A	Find and repair faults in television receivers	Part – with relevant category and range
		UEENEEH072A	Find and repair faults in the RF sections of electronic apparatus	Part – with relevant category and range
		UEENEEH073A	Find and repair faults in professional audio reproduction components	Part – with relevant category and range
		UEENEEH074A	Find and repair faults in audio/video recording equipment	Part – with relevant category and range
UTE NES501D A	Diagnose and rectify faults in apparatus and circuits (*Instrumentation*)	UEENEEI011A	Find and rectify faults in process control valve and associated equipment	Part – with relevant category and range
		UEENEEI014A	Find and rectify faults in process control systems	Part – with relevant category and range
UTE NES501E A	Diagnose and rectify faults in apparatus and circuits (*Refrigeration and a/conditioning*)	UEENEEJ011A	Diagnose and rectify faults in refrigeration and air conditioning systems and components	Part – with relevant category and range
UTE NES501F A	Diagnose and rectify faults in apparatus and circuits (*Data communications*)	UEENEEF011A	Test, report and rectify faults in voice and data installations	Part – with relevant category and range
UTE NES502A A	Diagnose and rectify faults in apparatus and complex circuits (*Computer systems*)	UEENEED015A	Administer user networks	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES502B A	Diagnose and rectify faults in apparatus and complex circuits (*Electrical*)	UEENEEG016A	Diagnose and rectify faults in lifts systems	Part – with relevant category and range
		UEENEEG038A	Diagnose and rectify faults in electrical energy distribution systems	Part – with relevant category and range
		UEENEEG039A	Diagnose and rectify faults in distributed generation systems	Part – with relevant category and range
		UEENEEG042A	Diagnose and rectify faults in electrical energy supply transmission systems	Part – with relevant category and range
UTE NES502C A	Diagnose and rectify faults in apparatus and complex circuits (*Electronics*)	UEENEEH029A	Diagnose and rectify faults in navigation systems	Part – with relevant category and range
		UEENEEH030A	Diagnose and rectify faults in satellite-based surveillance and observation systems	Part – with relevant category and range
		UEENEEH031A	Diagnose and rectify faults in radar apparatus and systems	Part – with relevant category and range
		UEENEEH032A	Diagnose and rectify faults in global positioning systems	Part – with relevant category and range
		UEENEEH033A	Diagnose and rectify faults in telecommunication apparatus and systems	Part – with relevant category and range
		UEENEEH034A	Diagnose and rectify faults in electronic medical equipment	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEH043A	Diagnose and rectify faults in digital subsystems of electronic controls	Part – with relevant category and range
		UEENEEH075A	Find and rectify faults and malfunctions in security system installations	Part – with relevant category and range
		UEENEEH076A	Diagnose and rectify faults in display circuits	Part – with relevant category and range
		UEENEEH077A	Diagnose and rectify faults in recording and replay apparatus	Part – with relevant category and range
		UEENEEH078A	Diagnose and rectify faults in camera circuits	Part – with relevant category and range
		UEENEEH079A	Diagnose and rectify faults in digital television apparatus	Part – with relevant category and range
		UEENEEH080A	Diagnose and rectify faults in digital transmission systems	Part – with relevant category and range
UTE NES502D A	Diagnose and rectify faults in apparatus and complex circuits (*Instrumentation*)	UEENEEI015A	Find and rectify faults in medical equipment control systems	Part – with relevant category and range
		UEENEEI021A	Find and repair faults in measuring and analysis systems	Part – with relevant category and range
UTE NES502E A	Diagnose and rectify faults in apparatus and complex circuits (*Refrigeration and a/conditioning*)	UEENEEJ022A	Diagnose faults in complex refrigeration or heating, ventilation and air conditioning control systems	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES503A A	Diagnose and rectify faults in apparatus and systems' circuits (*Computer systems*)	UEENEED051A	Provide programming solution for engineering problems	Part – with relevant category and range
UTE NES503B A	Diagnose and rectify faults in apparatus and systems' circuits (*Electrical*)	UEENEEG043A	Develop engineering solution for synchronous machine problems	Part – with relevant category and range
		UEENEEG044A	Develop engineering solutions for d.c. machine problems	Part – with relevant category and range
		UEENEEG045A	Develop engineering solutions for induction motor problems	Part – with relevant category and range
		UEENEEG046A	Develop engineering solutions for energy supply system protection problems	Part – with relevant category and range
UTE NES503C A	Diagnose and rectify faults in apparatus and systems' circuits (*Electronics*)	UEENEEH082A	Develop solutions to RF amplifiers problems	Part – with relevant category and range
		UEENEEH083A	Analyse the performance of wireless-based electronic systems	Part – with relevant category and range
UTE NES503D A	Diagnose and rectify faults in apparatus and systems' circuits (*Instrumentation*)	UEENEEI015A	Find and rectify faults in medical equipment control systems	Part – with relevant category and range
		UEENEEI026A	Provide solutions to pneumatic/hydraulic system operations	Part – with relevant category and range
		UEENEEI027A	Analyse complex electronic circuits controlling fluids	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES503E A	Diagnose and rectify faults in apparatus and systems' circuits (*Refrigeration and a/conditioning*)	UEENEEJ031A	Provide solutions to vibration problems in HVAC/R system design	Part – with relevant category and range
		UEENEEJ036A	Evaluate and report on energy management	Part – with relevant category and range
		UEENEEJ037A	Evaluate and report on air quality in buildings	Part – with relevant category and range
UTE NES504A A	Diagnose and rectify faults in advanced systems and apparatus (*Computer systems*)	UEENEED051A	Provide programming solution for engineering problems	Part – with relevant category and range
UTE NES504B A	Diagnose and rectify faults in advanced systems and apparatus (*Electrical*)	UEENEEG043A	Develop engineering solution for synchronous machine problems	Part – with relevant category and range
		UEENEEG044A	Develop engineering solutions for d.c. machine problems	Part – with relevant category and range
		UEENEEG045A	Develop engineering solutions for induction motor problems	Part – with relevant category and range
		UEENEEG046A	Develop engineering solutions for energy supply system protection problems	Part – with relevant category and range
UTE NES504C A	Diagnose and rectify faults in advanced systems and apparatus (*Electronics*)	UEENEEH082A	Develop solutions to RF amplifiers problems	Part – with relevant category and range
		UEENEEH083A	Analyse the performance of wireless-based electronic systems	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES504D A	Diagnose and rectify faults in advanced systems and apparatus (*Instrumentation*)	UEENEEI015A	Find and rectify faults in medical equipment control systems	Part – with relevant category and range
		UEENEEI026A	Provide solutions to pneumatic/hydraulic system operations	Part – with relevant category and range
		UEENEEI027A	Analyse complex electronic circuits controlling fluids	Part – with relevant category and range
UTE NES505N A	Locate and rectify fault(s) in electrical equip 1kVac/1.5kVdc by procedures (*Pre-assembled neon signs*)	UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures	Full – with relevant category and range
UTE NES505P A	Locate and rectify fault(s) in electrical equip 1kVac/1.5kVdc by procedures (*Single enclosed c/device*)	UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures	Full – with relevant category and range
UTE NES505Q A	Locate and rectify fault(s) in electrical equipment 1kVac/1.5kVdc by procedures (*Control devices*)	UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures	Full – with relevant category and range
UTE NES505R A	Locate and rectify fault(s) in electrical equipment 1kVac/1.5kVdc by procedures (*Electrical heaters)*	UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES505S A	Locate and rectify fault(s) in electrical equipment 1kVac/1.5kVdc by procedures (*Motors)*	UEENEEP007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures	Full – with relevant category and range
UTE NES506 A	Diagnose and rectify faults in renewable energy apparatus and Systems	UEENEEK028A	Diagnose, repair and maintain stand-alone photovoltaic power systems	Full – with relevant category and range
UTE NES507 A	Evaluate performance of motor control systems	UEENEEG043A	Develop engineering solution for synchronous machine problems	Part – with relevant category and range
		UEENEEG044A	Develop engineering solutions for d.c. machine problems	Part – with relevant category and range
		UEENEEG045A	Develop engineering solutions for induction motor problems	Part – with relevant category and range
UTE NES601 A	Coordinate the work of others	UEENEEE014A	Supervise and coordinate work activities. (In context of relevant technical units)	Full – with relevant category and range
UTE NES602A A	Develop commissioning programs for apparatus and circuits (*Computer systems*)		Incorporated in higher level units covering design and development	–
UTE NES602B A	Develop commissioning programs for apparatus and circuits (*Electrical*)		Incorporated in higher level units covering design and development	–
UTE NES602C A	Develop commissioning programs for apparatus and circuits (*Electronics*)		Incorporated in higher level units covering design and development	–

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES602D A	Develop commissioning programs for apparatus and circuits (*Instrumentation*)		Incorporated in higher level units covering design and development	–
UTE NES603A A	Develop maintenance programs for apparatus and circuits (*Computer systems*)	UEENEEE010A	Develop and implement maintenance programs	Full – with relevant category and range
UTE NES603B A	Develop maintenance programs for apparatus and circuits (*Electrical*)	UEENEEE010A	Develop and implement maintenance programs	Full – with relevant category and range
UTE NES603C A	Develop maintenance programs for apparatus and circuits (*Electronics*)	UEENEEE010A	Develop and implement maintenance programs	Full – with relevant category and range
UTE NES603D A	Develop maintenance programs for apparatus and circuits (*Instrumentation*)	UEENEEE010A	Develop and implement maintenance programs	Full – with relevant category and range
UTE NES604A A	Coordinate and manage commissioning processes (*Computer systems*)	UEENEED047A	Manage computer projects	Full – with relevant category and range
UTE NES604B A	Coordinate and manage commissioning processes (*Electrical*)	UEENEEG069A	Manage electrical projects	Full – with relevant category and range
UTE NES604C A	Coordinate and manage commissioning processes (*Electronics*)	UEENEEH041A	Manage and implement electronic projects	Full – with relevant category and range
UTE NES604D A	Coordinate and manage commissioning processes (*Instrumentation*)	UEENEEI034A	Manage control projects	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEEI036A	Manage automated systems projects	–
UTE NES604E A	Coordinate and manage commissioning processes (*Refrigeration and a/conditioning)*	UEENEEJ040A	Manage refrigeration and air conditioning projects	Full – with relevant category and range
UTE NES605A A	Coordinate and manage routine maintenance (*Computer systems*)	UEENEEE010A	Develop and implement maintenance programs	Full – with relevant category and range
UTE NES605B A	Coordinate and manage routine maintenance (*Electrical*)	UEENEEE010A	Develop and implement maintenance programs	Full – with relevant category and range
UTE NES605C A	Coordinate and manage routine maintenance (*Electronics*)	UEENEEE010A	Develop and implement maintenance programs	Full – with relevant category and range
UTE NES605D A	Coordinate and manage routine maintenance (*Instrumentation*)	UEENEEE010A	Develop and implement maintenance programs	Full – with relevant category and range
UTE NES605E A	Coordinate and manage routine maintenance (*Refrigeration and a/conditioning*)	UEENEEE010A	Develop and implement maintenance programs	Full – with relevant category and range
UTE NES606A A	Coordinate and manage installation projects (*Computer systems*)	UEENEED047A	Manage computer projects	Full – with relevant category and range
UTE NES606B A	Coordinate and manage installation projects (*Electrical*)	UEENEEG069A	Manage electrical projects	Full – with relevant category and range
UTE NES606C A	Coordinate and manage installation projects (*Electronics*)	UEENEEH041A	Manage and implement electronic projects	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES606D A	Coordinate and manage installation projects (*Instrumentation*)	UEENEEI034A	Manage control projects	Full – with relevant category and range
		UEENEEI036A	Manage automated systems projects	Full – with relevant category and range
UTE NES606E A	Coordinate and manage installation projects (*Refrigeration and a/conditioning*)	UEENEEJ040A	Manage refrigeration and air conditioning projects	Full – with relevant category and range
UTE NES607 A	Develop and apply electrotechnology contracting business plans	UEENEEG014A	Develop plans and compliance policies to conduct a contracting business	Full – with relevant category and range
UTE NES608 A	Apply electrotechnology contracting business practices	UEENEEC002A	Source and purchase material/parts for installation or service jobs	Part – with relevant category and range
		UEENEEC003A	Provide quotations for installation or service jobs	Part – with relevant category and range
		UEENEEC005A	Estimate electrotechnology projects	Part – with relevant category and range
		UEENEEC006A	Prepare tender submissions for electrotechnology projects	Part – with relevant category and range
		UEENEEC007A	Manage contract variations	Part – with relevant category and range
UTE NES609T A	Develop and manage maintenance programs for hazardous area electrical equipment (*Ex mixed*)	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES609U A	Develop and manage maintenance programs for hazardous area electrical equipment (*Ex p*)	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment	Full – with relevant category and range
UTE NES609V A	Develop and manage maintenance programs for hazardous area electrical equipment (*Dip*)	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment	Full – with relevant category and range
UTE NES609W A	Develop and manage maintenance programs for hazardous area electrical equipment (*Ex n*)	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment	Full – with relevant category and range
UTE NES609X A	Develop and manage maintenance programs for hazardous area electrical equipment (*Ex i*)	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment	Full – with relevant category and range
UTE NES609Y A	Develop and manage maintenance programs for hazardous area electrical equipment (*Ex e*)	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment	Full – with relevant category and range
UTE NES609Z A	Develop and manage maintenance programs for hazardous area electrical equipment (*Ex d*)	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment	Full – with relevant category and range
UTE NES610 A	Ensure the safety of hazardous areas	UEENEEM013B	Ensure the safety of hazardous areas	Full – with relevant category and range
UTE NES701A A	Redesign and develop modifications to apparatus and systems' circuits (*Computer systems*)	UEENEED014A	Design and manage enterprise networks	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEED019A	Design and implement Internetworking systems – advanced routing	Part – with relevant category and range
		UEENEE D020A	Design and implement Internetworking systems – remote access	Part – with relevant category and range
		UEENEED021A	Design and implement Internetworking systems – multi-layer switching	Part – with relevant category and range
		UEENEED022A	Design and implement Internetworking systems – security	Part – with relevant category and range
		UEENEED023A	Design and implement Internetworking systems – wireless LANs/WANs	Part – with relevant category and range
		UEENEED018A	Design and implement Internetworking systems	Part – with relevant category and range
		UEENEED019A	Design and implement Internetworking systems – advanced routing	Part – with relevant category and range
		UEENEED020A	Design and implement Internetworking systems – remote access	Part – with relevant category and range
		UEENEED021A	Design and implement Internetworking systems – multi-layer switching	Part – with relevant category and range
		UEENEED022A	Design and implement Internetworking systems – security	Part – with relevant category and range
		UEENEED023A	Design and implement Internetworking systems – wireless LANs/WANs	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEED025A	Design and configure Human-Machine Interface networks	Part – with relevant category and range
		UEENEED026A	Design a computer based control system	Part – with relevant category and range
		UEENEED033A	Design complex integrated systems	Part – with relevant category and range
		UEENEED052A	Design embedded controller systems	Part – with relevant category and range
UTE NES701B A	Redesign and develop modifications to apparatus and systems' circuits (*Electrical*)	UEENEEG027A	Design electrical installations with a LV demand greater than 400V per phase	Part – with relevant category and range
		UEENEEG030A	Design switchboards rated for high fault levels	Part – with relevant category and range
		UEENEEG061A	Design and develop modifications to electrical machines	Part – with relevant category and range
UTE NES701C A	Redesign and develop modifications to apparatus and systems' circuits (*Electronics*)	UEENEEH048A	Design and develop advance digital systems	Part – with relevant category and range
		UEENEEH059A	Design integrated complex security systems	Part – with relevant category and range
		UEENEEH081A	Design printed circuit boards	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES701D A	Redesign and develop modifications to apparatus and systems' circuits (*Instrumentation*)	UEENEEI023A	Design electronic control systems	Part – with relevant category and range
UTE NES701E A	Redesign and develop modifications to apparatus and systems' circuits (*Refrigeration and a/conditioning*)	UEENEEJ039A	Develop specifications and prepare drawings for HVAC/R projects	Part – with relevant category and range
		UEENEEJ041A	Design complex commercial refrigeration systems	Part – with relevant category and range
		UEENEEJ042A	Design complex industrial refrigeration systems	Part – with relevant category and range
		UEENEEJ043A	Design complex air conditioning systems	Part – with relevant category and range
		UEENEEJ044A	Design mechanical ventilation/exhaust systems	Part – with relevant category and range
		UEENEEJ045A	Design hydronic systems	Part – with relevant category and range
		UEENEEJ046A	Design complex control systems for a heating, ventilation, air conditioning or refrigeration system	Part – with relevant category and range
UTE NES702A A	Design electrical/electronic apparatus and systems (*Computer systems*)	UEENEED014A	Design and manage enterprise networks	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEED019A	Design and implement Internetworking systems – advanced routing	Part – with relevant category and range
		UEENEED020A	Design and implement Internetworking systems – remote access	Part – with relevant category and range
		UEENEED021A	Design and implement Internetworking systems – multi-layer switching	Part – with relevant category and range
		UEENEED022A	Design and implement Internetworking systems – security	Part – with relevant category and range
		UEENEED023A	Design and implement Internetworking systems – wireless LANs/WANs	Part – with relevant category and range
		UEENEED018A	Design and implement Internetworking systems	Part – with relevant category and range
		UEENEED019A	Design and implement Internetworking systems – advanced routing	Part – with relevant category and range
		UEENEED020A	Design and implement Internetworking systems – remote access	Part – with relevant category and range
		UEENEED021A	Design and implement Internetworking systems – multi-layer switching	Part – with relevant category and range
		UEENEED022A	Design and implement Internetworking systems – security	Part – with relevant category and range
		UEENEED023A	Design and implement Internetworking systems – wireless LANs/WANs	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
		UEENEED025A	Design and configure Human-Machine Interface networks	Part – with relevant category and range
		UEENEED026A	Design a computer based control system	Part – with relevant category and range
		UEENEED033A	Design complex integrated systems	Part – with relevant category and range
		UEENEED052A	Design embedded controller systems	Part – with relevant category and range
UTE NES702B A	Design electrical/electronic apparatus and systems (*Electrical*)	UEENEEG027A	Design electrical installations with a LV demand greater than 400V per phase	Part – with relevant category and range
		UEENEEG030A	Design switchboards rated for high fault levels	Part – with relevant category and range
		UEENEEG061A	Design and develop modifications to electrical machines	Part – with relevant category and range
UTE NES702C A	Design electrical/electronic apparatus and systems (*Electronics*)	UEENEEH048A	Design and develop advance digital systems	Part – with relevant category and range
		UEENEEH059A	Design integrated complex security systems	Part – with relevant category and range
		UEENEEH081A	Design printed circuit boards	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES702D A	Design electrical/electronic apparatus and systems (*Instrumentation*)	UEENEEI023A	Design electronic control systems	Part – with relevant category and range
UTE NES703A A	Plan installation of electrotech apparatus and wiring/piping systems (*Computer systems*)	UEENEED048A	Plan computer systems projects	Part – with relevant category and range
UTE NES703B A	Plan installation of electrotech apparatus and wiring/piping systems (*Electrical*)	UEENEEG070A	Plan electrical projects	Part – with relevant category and range
UTE NES703C A	Plan installation of electrotech apparatus and wiring/piping systems (*Electronics*)	UEENEEH060A	Plan electronic projects	Part – with relevant category and range
UTE NES703D A	Plan installation of electrotech apparatus and wiring/piping systems (*Instrumentation*)	UEENEEI035A	Plan control projects	Part – with relevant category and range
		UEENEEI037A	Plan automated systems projects	Part – with relevant category and range
UTE NES703E A	Plan installation of electrotech apparatus and wiring/piping systems (*Refrigeration and a/conditioning*)	UEENEEJ069A	Plan refrigeration and air conditioning projects	Part – with relevant category and range
UTE NES704 A	Plan illumination systems	UEENEEG027A	Design electrical installations with a LV demand greater than 400 A per phase	Part – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES705T A	Design and develop modifications to explosion-protected equipment (*Ex mixed*)	UEENEEM014B	Design and develop modifications to explosion-protected equipment	Full – with relevant category and range
UTE NES705U A	Design and develop modifications to explosion-protected equipment (*Ex p*)	UEENEEM014B	Design and develop modifications to explosion-protected equipment	Full – with relevant category and range
UTE NES705V A	Design and develop modifications to explosion-protected equipment (*Dip*)	UEENEEM014B	Design and develop modifications to explosion-protected equipment	Full – with relevant category and range
UTE NES705W A	Design and develop modifications to explosion-protected equipment (*Ex n*)	UEENEEM014A	Design and develop modifications to explosion-protected equipment	Full – with relevant category and range
UTE NES705X A	Design and develop modifications to explosion-protected equipment (*Ex i*)	UEENEEM014A	Design and develop modifications to explosion-protected equipment	Full – with relevant category and range
UTE NES705Y A	Design and develop modifications to explosion-protected equipment (*Ex e*)	UEENEEM014A	Design and develop modifications to explosion-protected equipment	Full – with relevant category and range
UTE NES705Z A	Design and develop modifications to explosion-protected equipment (*Ex d*)	UEENEEM014A	Design and develop modifications to explosion-protected equipment	Full – with relevant category and range
UTE NES706 A	Classify hazardous areas	UEENEEM015A	Classify hazardous areas	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES707T A	Design electrical installations in hazardous areas (*Ex mixed*)	UEENEEM016A	Design electrical installations in hazardous areas	Full – with relevant category and range
UTE NES707U A	Design electrical installations in hazardous areas (*Ex p*)	UEENEEM016A	Design electrical installations in hazardous areas	Full – with relevant category and range
UTE NES707V A	Design electrical installations in hazardous areas (*Dip*)	UEENEEM016A	Design electrical installations in hazardous areas	Full – with relevant category and range
UTE NES707W A	Design electrical installations in hazardous areas (*Ex n*)	UEENEEM016A	Design electrical installations in hazardous areas	Full – with relevant category and range
UTE NES707X A	Design electrical installations in hazardous areas (*Ex i*)	UEENEEM016A	Design electrical installations in hazardous areas	Full – with relevant category and range
UTE NES707Y A	Design electrical installations in hazardous areas (*Ex e*)	UEENEEM016A	Design electrical installations in hazardous areas	Full – with relevant category and range
UTE NES707Z A	Design electrical installations in hazardous areas (*Ex d*)	UEENEEM016A	Design electrical installations in hazardous areas	Full – with relevant category and range
UTE NES708T A	Design explosion-protected electrical systems (*Ex mixed*)	UEENEEM017A	Design explosion-protected electrical systems	Full – with relevant category and range
UTE NES708U A	Design explosion-protected electrical systems (*Ex p*)	UEENEEM017A	Design explosion-protected electrical systems	Full – with relevant category and range
UTE NES708V A	Design explosion-protected electrical systems (*Dip*)	UEENEEM017A	Design explosion-protected electrical systems	Full – with relevant category and range
UTE NES708W A	Design explosion-protected electrical systems (*Ex n*)	UEENEEM017A	Design explosion-protected electrical systems	Full – with relevant category and range

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CSUs in Electrotechnology Training Package UTE99		CSUs in Electrotechnology Training Package UEE06 (Relationship and comments to units in the former Training Package)		Equivalent – Full, part or not
UTE NES708X A	Design explosion-protected electrical systems (*Ex i*)	UEENEEM017A	Design explosion-protected electrical systems	Full – with relevant category and range
UTE NES708Y A	Design explosion-protected electrical systems (*Ex e*)	UEENEEM017A	Design explosion-protected electrical systems	Full – with relevant category and range
UTE NES708Z A	Design explosion-protected electrical systems (*Ex d*)	UEENEEM017A	Design explosion-protected electrical systems	Full – with relevant category and range
UTE NES709 A	Design a renewable energy system	UEENEEK029A	Design renewable energy heating systems	Full – with relevant category and range
		UEENEEK031A	Design wind energy conversion systems rated to 10 kW.	Full – with relevant category and range
		UEENEEK033A	Design set up hybrid power systems	Full – with relevant category and range
		UEENEEK035A	Design grid connected power supply systems	Full – with relevant category and range
		UEENEEK038A	Design micro-hydro systems	Full – with relevant category and range
UTE NES710 A	Plan the installation of renewable energy apparatus and systems	UEENEEK022A	Plan renewable energy projects	Full – with relevant category and range

Notes:

1. Category also includes the use of 'endorsement', where applicable.

2. The term 'Maintain' or 'Maintenance' is used broadly to mean "to ensure continued safe and function operation…" which encompasses attending to breakdowns, serving, fault finding/diagnosis and formal maintenance. Competency in relation to formal (periodic and scheduled) maintenance is covered in the UEE04 version of the Training Package by Unit UEENEEE009A Comply with scheduled and preventative maintenance program processes.

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1.2.10 Imported Competency Standard Units

The Table below shows the Imported competency standard units in the Electricity Supply Industry – Transmission, Distribution and Rail Sector Training Package.

Table 4 – List of Imported Competency Standard Units

Code	Title	Origin
BSBFLM303B	Contribute to effective workplace relationships	Innovation and Business Services. ISC
BSBFLM305B	Support operational plan	Innovation and Business Services. ISC
BSBFLM306B	Provide workplace information and resourcing plans	Innovation and Business Services. ISC
BSBFLM309B	Support continuous improvement systems and processes	Innovation and Business Services. ISC
BSBFLM311B	Support a workplace learning environment	Innovation and Business Services. ISC
BSBFLM312A	Contribute to team effectiveness	Innovation and Business Services. ISC
BSBFLM403B	Manage effective workplace relationships	Innovation and Business Services. ISC
BSBFLM405B	Implement operational plan	Innovation and Business Services. ISC
BSBFLM406B	Implement workplace information system	Innovation and Business Services. ISC
BSBFLM409B	Implement continuous improvement	Innovation and Business Services. ISC
BSBFLM412A	Promote team effectiveness	Innovation and Business Services. ISC
BSBFLM501B	Manage personal work priorities and professional development	Innovation and Business Services. ISC
BSBFLM503B	Manage effective workplace relationships	Innovation and Business Services. ISC

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Code	Title	Origin
BSBFLM505B	Manage operational plan	Innovation and Business Services. ISC
BSBFLM506B	Manage workplace information systems	Innovation and Business Services. ISC
BSBFLM507A	Manage quality customer service	Innovation and Business Services. ISC
BSBFLM509B	Facilitate continuous improvement	Innovation and Business Services. ISC
BSBFLM510B	Facilitate and capitalise on change and innovation	Innovation and Business Services. ISC
BSBFLM511B	Develop a workplace learning environment	Innovation and Business Services. ISC
BSBFLM512B	Ensure team effectiveness	Innovation and Business Services. ISC
BSBFLM513A	Manage finances	Innovation and Business Services. ISC
BSBFLM514A	Manage people	Innovation and Business Services. ISC
BSBMGT507A	Manage Environmental Performance	Innovation and Business Services. ISC
ICTTC013C	Perform accurate cable system test	IT Skills Hub Pty Ltd – IBSA
ICTTC064C	Haul underground cable	IT Skills Hub Pty Ltd – IBSA
ICTTC065C	Splice optic fibre cable	IT Skills Hub Pty Ltd – IBSA
ICTTC066C	Joint and terminate co-axial cable	IT Skills Hub Pty Ltd – IBSA
ICTTC068C	Install telecommunications service to a building	IT Skills Hub Pty Ltd – IBSA
ICTTC069C	Install network cable equipment	IT Skills Hub Pty Ltd – IBSA
ICTTC104C	Maintain an electronic system	IT Skills Hub Pty Ltd – IBSA

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Code	Title	Origin
ICTTC127C	Supervise worksite activities	IT Skills Hub Pty Ltd – IBSA
ICTTC131B	Install an above ground equipment enclosure	IT Skills Hub Pty Ltd – IBSA
ICTTC133B	Construct underground enclosures	IT Skills Hub Pty Ltd – IBSA
ICTTC134B	Fix aerial cable	IT Skills Hub Pty Ltd – IBSA
ICTTC135B	Joint metallic cable	IT Skills Hub Pty Ltd – IBSA
UETTDRIS04A	Perform high voltage field switching operation to a given schedule	EE-Oz Training Standards
EPOPS234A	Perform routine oxyacetylene (fuel gas) welding	EE-Oz Training Standards – Electrotechnology Training Package
UEPOPS235A	Perform routine manual arc welding	EE-Oz Training Standards – Electrotechnology Training Package
UEPOPS236A	Perform manual heating, thermal cutting and gouging	EE-Oz Training Standards – Electrotechnology Training Package

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UEE06
Electrotechnology Training Package

Volume 1 – Part 3
Assessment Guidelines

Volume 1 of 2

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Volume 1 Part 3

Assessment Guidelines

1.3.1 Introduction

From an industry perspective, the purpose of assessment is to lead to formal recognition of the industry benchmark competencies or formal recognition of competencies from other industries. Formal recognition may be for individual competencies or for groups of competencies, which may be combined to satisfy the requirements of a National Qualification.

The Assessment Guidelines outlined here provide the endorsed framework for assessment of the competency standard units in this Training Package. They are designed to ensure that assessment activities are consistent with the Australian Quality Training Framework (AQTF) Standards for Registered Training Organisations (RTOs). Assessments against the Competency Standard Units in this Training Package must be carried out in accordance with these endorsed Assessment Guidelines.

Note:

1. Using this guideline to support any assessment strategy or process does not remove the responsibility of employers and employees to ensure appropriate 'duty of care' arrangements are maintained under relevant occupational health and safety legislation, and any other prevailing legislation, regulation, standard or code. RTOs should recognise this in their assessment processes and provide requisite advice.
2. In the assessment process it should be acknowledged that State/Territory regulatory requirements and/or Codes of Practice may vary. Therefore there may be a requirement for the demonstration of a greater range of items to those specified in respective Competency Standard Units. RTOs should incorporate this in their assessment processes and practices.

1.3.2 Assessment System Overview

This section provides an overview of the requirements for assessment when using this Training Package, including a summary of the AQTF requirements; licensing/registration requirements; and assessment pathways. By way of supporting, and reinforcing, both the concept of competency and the Competency Standard Unit, the Electrotechnology Industry embraces the following tenets:

- Wherever practicable, summative (or final) assessment is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment.
- All persons may claim formal recognition for an assessment of an individual competency standard unit or a group of units (skill clusters).
- All persons have the right to have relevant competencies recognised through the most expeditious assessment system and method.

Benchmarks for Assessment

Assessment within the National Skills Framework is defined as the process of collecting evidence and making judgements about whether competency has been achieved.

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Competency is something that is inferred rather than proven. The purpose of assessment is to confirm through evidence whether an individual can perform to the standards expected in the Electrotechnology Industry workplace, as expressed in the relevant endorsed competency standard unit.

The competency standard units in this Training Package are the benchmarks for assessment in the Electrotechnology Industry. They are the basis for nationally recognised Australian Qualifications Framework (AQF) qualifications and Statements of Attainment issued by Registered Training Organisations (RTOs).

The units in this Training Package include:

- National Electrotechnology Industry (UEE) Competency Standards, Edition 1, 2005 and subsequent endorsed revisions.
- Imported units from other endorsed Training Packages that have been valued by the National Electrotechnology Competency Advisory Council (NECAC) for inclusion in Qualifications in this Training Package.

An index of the developed competency standard units is contained in Volume 1 Part 2.

Australian Quality Training Framework Assessment Requirements

Assessment leading to nationally recognised AQF qualifications and Statements of Attainment in the vocational education and training sector must meet the requirement of the AQTF as expressed in the *Standards for* Registered Training Organisations.

The *Standards for Registered Training Organisations* can be downloaded from the Department of Education, Science and Training website at www.dest.gov.au or can be obtained in hard copy from DEST. The following points summarise the assessment requirements under the AQTF.

Registration of Training Organisations

Assessment must be conducted by or on behalf of a Registered Training Organisation (RTO) formally registered by a State/Territory registering/course accrediting body in accordance with the standards for Registered Training Organisations. The RTO must have the specific competency standard units and/or AQF qualifications on its scope of registration.

The RTO is responsible for all aspects of assessment. The assessment must cover the critical aspects of evidence (assessment) detailed in each unit. In addressing these critical aspects, and maintaining reasonable consistency, the assessment is to ensure that:

- the individual satisfies the requirements in terms of underpinning/essential knowledge and associated skills so that their ability to transfer the competency to differing circumstances may reasonably be inferred
- the individual is competent to safely perform all the practical applications required.

The RTO is also responsible for issuing formal recognition in the form of National Qualifications or Statements of Attainment. In discharging these responsibilities the RTO will:

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- issue the National Qualification based on individuals having been assessed as competent for the qualification and all the competency standard units which constitute the qualification, **and/or**
- issue formal recognition (Statements of Attainment) in respect of individual or clusters of competency standard units for which candidates have been assessed and found competent.

Consistent with the criteria established by State Training Authorities, RTOs are responsible for the implementation of the quality assurance arrangements included in these guidelines.

Quality Training and Assessment

Each RTO must have systems in place to plan for and provide quality training and assessment. See AQTF Standard 1: Standards for Registered Training Organisations.

Assessor Competency Requirements

Each person involved in training, assessment or client service must be competent for the functions they perform. See AQTF Standard 7 of the Standards for Registered Training Organisations for assessor competency requirements. AQTF Standard 7 also specifies the competencies that must be held by trainers.

Assessment Requirements

RTO assessments must meet all the requirements of the endorsed components of the Training Package within its scope of registration. See AQTF Standard 8 of the Standards for Registered Training Organisations.

Assessment Strategies

Each RTO must identify, negotiate, plan and implement appropriate learning and assessment strategies that are consistent with industry or regulator preference, and meet the needs of each of its clients. See AQTF Standard 9 of the Standards for Registered Training Organisations. ANTA[1] has developed a resource guide to support RTOs in the development of learning and assessment strategies.

Mutual Recognition

Each RTO must recognise the AQF qualifications and Statements of Attainment issued by any other RTO. See AQTF Standard 5 of the Standards for Registered Training Organisations.

RTOs may contact the EE-Oz Training Standards, the National Industry Skills Council for the ElectroComms and EnergyUtilities Industry, for assistance mutual recognition.

Access and Equity and Client Services

Each RTO must apply access and equity principles, provide timely and appropriate information, advice and support services to assist clients to identify and achieve desired outcomes. This may include reasonable adjustments in assessment. See AQTF Standard 6 of the Standards for Registered Training Organisations.

[1] The functions of ANTA were transferred to the Department of Education Science and Training (DEST) on 1st July 2005. Please note this when seeking information and contact details.

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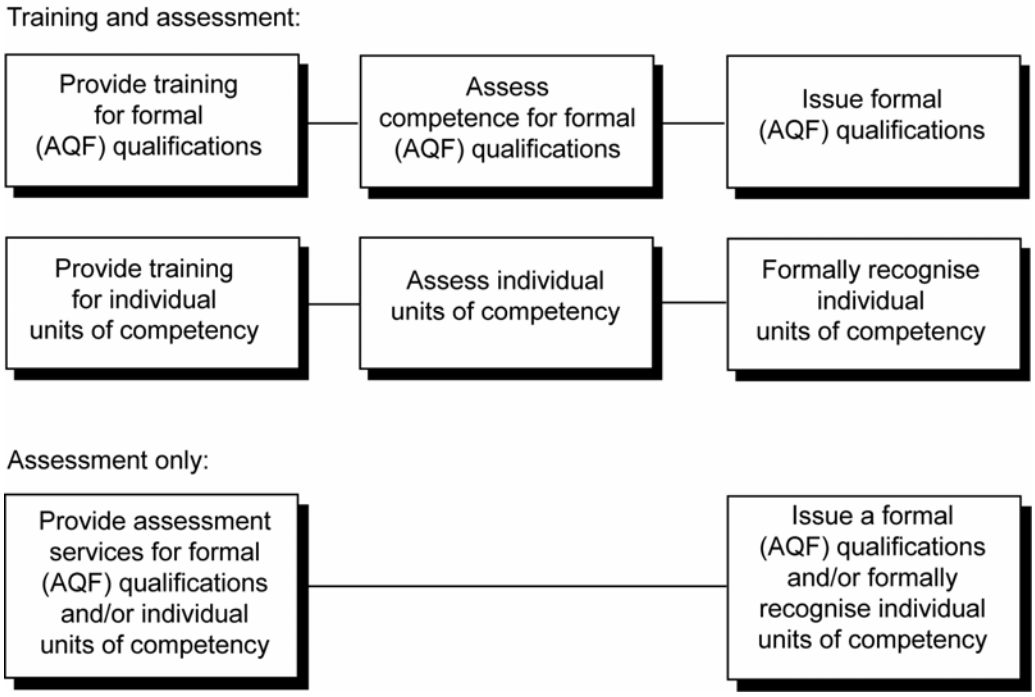
Partnership Arrangements

An RTO must have, and comply with, written agreements with each organisation providing training and/or assessment on its behalf. See AQTF Standard 1.6 of the *Standards for Registered Training Organisations*.

RTOs operating in partnership with other organisations are responsible for the quality of the partnering organisation services and service outcomes. Under the AQTF, RTOs may enter into partnerships with external and/or non-registered third party organisations, such as schools, industry organisations and enterprises, for delivery and assessment within the RTOs scope of registration.

External and/or non-registered third party organisations do not have to be Registered Training Organisations, however, the agreement must specify how each party to the agreement will discharge its responsibilities for compliance with all aspects of the Standards for Registered Training Organisations.

Roles for Registered Training Organisations



Where the RTO establishes a partnership arrangement it must have a formal agreement with the organisation that provides the training and/or assessment services. This agreement must specify how all parties will discharge their responsibilities for ensuring the quality of the training and/or assessment conducted on its behalf, including the qualification requirements of those to be involved in delivery and assessment. The RTO has full responsibility for the quality and outcomes of any training or assessment conducted on its behalf, and must maintain a register of all such agreements.

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Recording Assessment Outcomes

Each RTO must have effective administration and records management procedures in place, and must record AQF qualifications and Statements of Attainment issued. See AQTF Standards 4 and 10.2 of the *Standards for Registered Training Organisations.*

Statements of Attainment and qualifications issued under the AQF must comply with the relevant provisions in the current *Australian Qualifications Framework Implementation Handbook* and any other guides issued by the respective State Training Authorities, as well as any regulated requirements including those preferred by industry and advised within this Training Package.

Issuing Transcripts — AQF Qualifications and Statements of Attainment

Each RTO issues AQF qualifications and Statements of Attainment that meet the requirements of the AQF Implementation Handbook and the requirements of this Training Package within the scope of its registration.

An AQF qualification is issued once the full requirements for a qualification, as specified in the nationally endorsed Training Package, are met. The qualification includes a statement of results achieved in the specified essential knowledge and associated skills underpinning each competency standard unit. A Statement of Attainment is issued where the individual is assessed as competent against fewer competency standard unit(s) than required for an AQF qualification, but it includes the statement of essential knowledge and skills results. See AQTF Standard 10 and Section 2 of the Standards for RTOs.

Licensing/Registration Arrangements

It is a requirement that Training Package Developers consider licensing/registration requirements in the development of the respective Industry Training Package. Generally licensing/registration requirements will be incorporated in relevant competency standard units/qualifications.

This is consistent with the COAG decision that;

a) VET authorities will ensure that the confidence of regulators in the training system is further developed through:
   i. Reflecting regulators' current skill related eligibility requirements in national competency standards; and
   ii. Developing and implementing outcomes based auditing models in consultation with regulators and other key parties (see recommendation on the Commitment to Quality Training);
b) regulators will recognize the VET qualification or statement of attainment as meeting all of the skill related eligibility requirements[2] for gaining a license in relevant regulated occupations;

Where licensing/registration applies, RTOs are to ensure that assessment is consistent with the licensing/registration requirements.

[2] Skill related eligibility requirements include those related to competency standards, qualifications and/or industry experience requirements.

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To conduct assessment for the purpose of licensing/registration RTOs must ensure that assessment and assessors comply with the AQTF and the requirements of the relevant Regulator. RTOs shall contact the respective agencies to determine these requirements.

Assessment shall be in accordance with the requirements of the relevant Regulator which may include details of:

i. assessment of essential knowledge and skills (EKAS)

ii. a minimum benchmark assessment applied to the EKAS that meets licensing requirements

iii. assessment of a Competency Standard Unit in part or full in a realistic simulated workplace environment. Where simulation is used it is to be consistent with the preferred industry/regulator approach.

Where Regulators advise the use of training support material(s) and it is used to provide the essential knowledge and skills, then details of the support material(s) may form part of the statement of results attached to the qualification or statement of attainment.

Where regulatory requirements apply and if required by the relevant regulatory authority, the RTO should enter relevant information into the individual industry approved recording system. Where the industry prefers the use of an industry approved instrument, this may be negotiated directly with RTOs.

Requirements for RTOs

RTOs, are responsible for the implementation of the quality assurance arrangements included in these guidelines, however, where competency development occurs in regulated/licensed areas, RTOs are to incorporate in their quality assurance arrangements any additional, prevailing regulatory authority requirements. RTOs should report assessment consistent with regulatory requirements as agreed.

Selected competency standard units and qualifications in this Training Package provide the basis for a range of statutory licensing and industry registration arrangements. To satisfy these licensing and registration arrangements, RTOs are to keep abreast of developments and any additional requirements detailed by such bodies and their respective nominees. RTOs and their assessors are therefore required to liaise with the Training Package developer and respective agencies to ensure requirements are known and met.

Requirements for Candidates

Individuals being assessed under statutory licensing and industry registration systems may be required to comply with training and experience requirements additional to any minimum requirements identified in this Training Package. RTOs are to formally advise individuals of these additional requirements prior to the delivery of the Training Package outcomes.

The latest information on licensing/registration requirements may be obtained by contacting the relevant Regulator or visiting the Electrical Regulatory Authorities Council (ERAC) website http://www.erac.gov.au/

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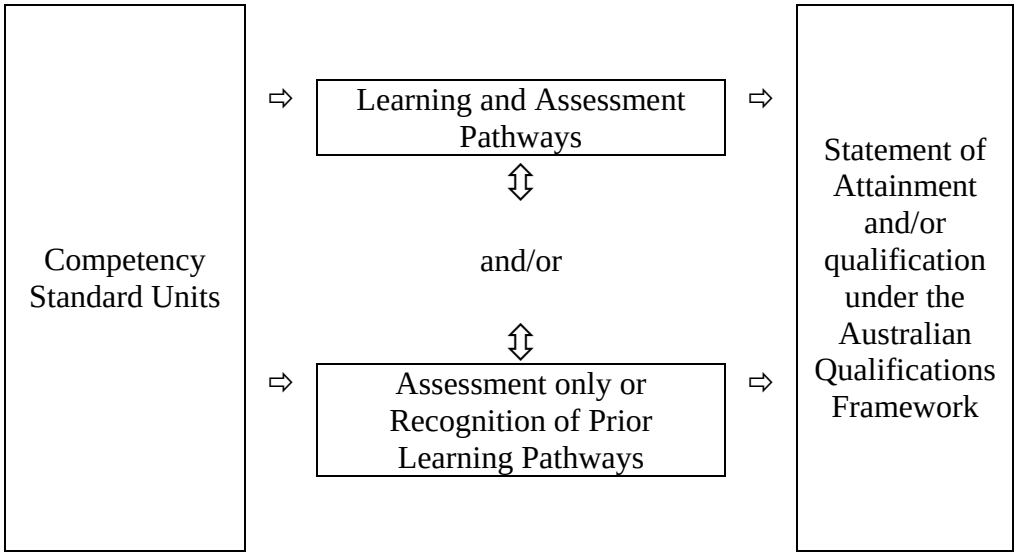
1.3.3 Learning and Assessment Pathways

Competencies in Training Packages may be attained in a number of ways including:

- education and training
- experiences in the workplace
- general life experience
- any combination of the above.

Assessment under Training Packages leading to an AQF qualification or Statement of Attainment may follow a learning and assessment pathway, an assessment-only or recognition pathway or a combination of the two as illustrated below.



Each of these assessment pathways leads to full recognition of competencies held – the critical issue is that the candidate is competent, not how the competency was acquired.

Assessment, by any pathway, must comply with the assessment requirements set out in the *Standards for Registered Training Organisations*.

Within the general Training Package Pathways continuum framework, referred to in the previous section, three distinct Assessment Pathways have been identified for use within the Electrotechnology Industry.

Pathway 1: New entrant competency development

Pathway 2: Recognition of currently held competencies or prior learning and workplace experience

Pathway 3: Recognition of other currently held competencies (other industry standards)

Although not exclusive, the three pathways provide typical recognition processes for individual competency standard units or groups of units that make up Qualifications or Statements of Attainment.

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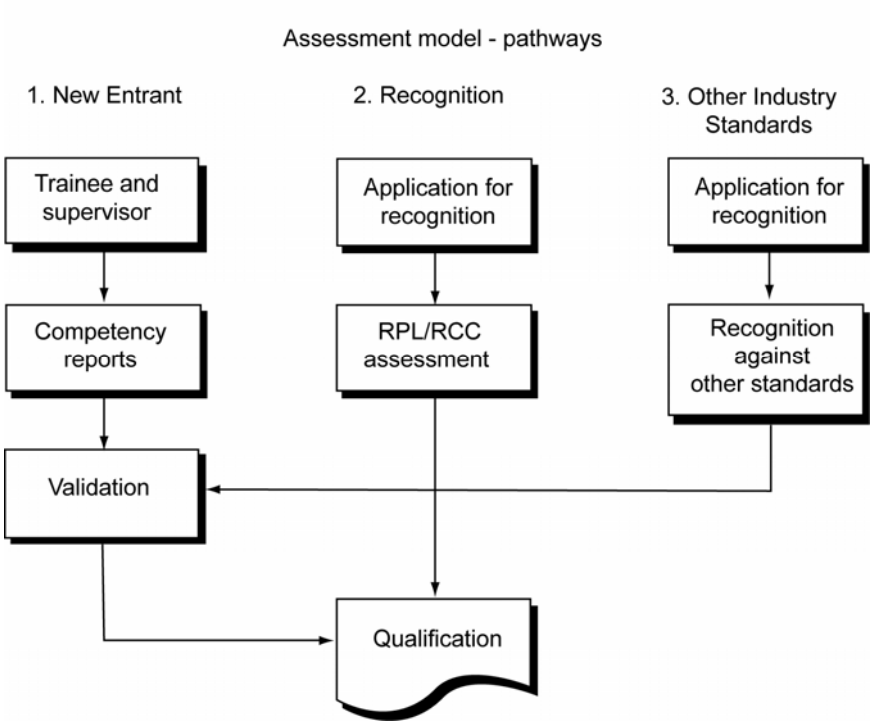

Pathway 1: New Entrant Competency Development

This pathway is for individuals who are undertaking an industry-preferred competency development plan. The users of this pathway may be:

- contracted employment based employees who are generally new apprentices and who undertake an approved training program that supports a competency development plan,

OR

- those who undertake an approved structured training program in an institutional environment to achieve competency outcomes.

Evidence of Competency

In Pathway 1 evidence required to determine competence for the issuance of the qualification or Statement of Attainment is to be in accordance with **3.4 Assessment principles within the Electrotechnology Industry** contained herein. The evidence however, must be sufficient in quality, quantity and type and be gathered in an on-going basis in a timely and accurate manner from several sources, such as, workplace and educational experiences based on the approved industry training program and related competency development plan in which individuals are involved.

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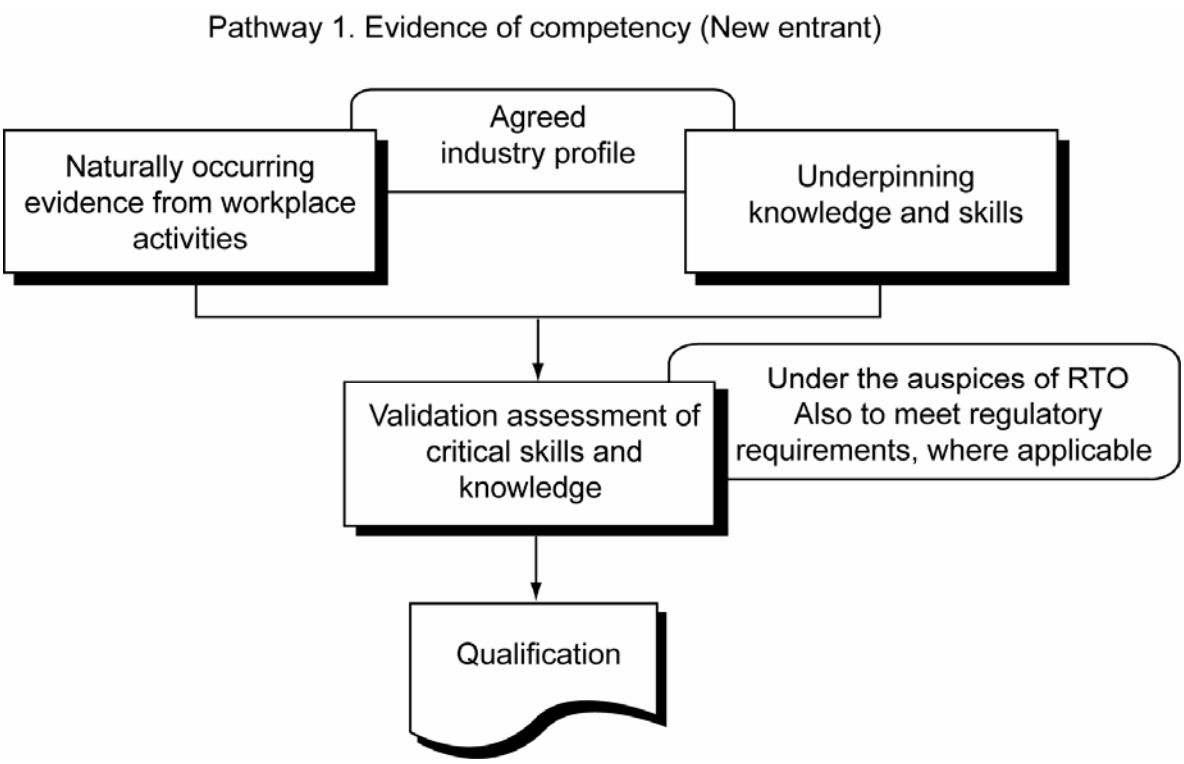

Pathway 2: Recognition of prior learning/current competencies (RPL/RCC)

This pathway is for those who may have acquired skills and knowledge in relevant competency standard units outside formally recognised processes. The users of this pathway will include applicants from overseas and also applicants who have developed skills in allied industries but who have no formal recognition in respect of industry standards or qualifications. In using this pathway RTOs should also identify if any equivalence mapping document exists as per Pathway 3.

An existing national mechanism for recognition as a tradesperson exists under the Tradesmens' Rights Regulation Act, which is administered by Trades Recognition Australia (TRA) – part of the Commonwealth Department of Industrial Relations. TRA grants recognition for the purposes of migration but further analysis of the applicant's knowledge and skills is often needed before competency can be attributed.

The TRA process mainly operates to provide formal recognition of the knowledge and skills of migrants, which have been developed by structured training and/or work experience in overseas countries. However, it is also an important mechanism for the assessment and recognition of the competencies of those who may not have had access to the industry-preferred new entrant model of competency development for trade vocations in Australia. For more information visit:
http://www.workplace.gov.au/workplace/Category/SchemesInitiatives/TRA/TRA-TradeClassificationsAssessed.htm

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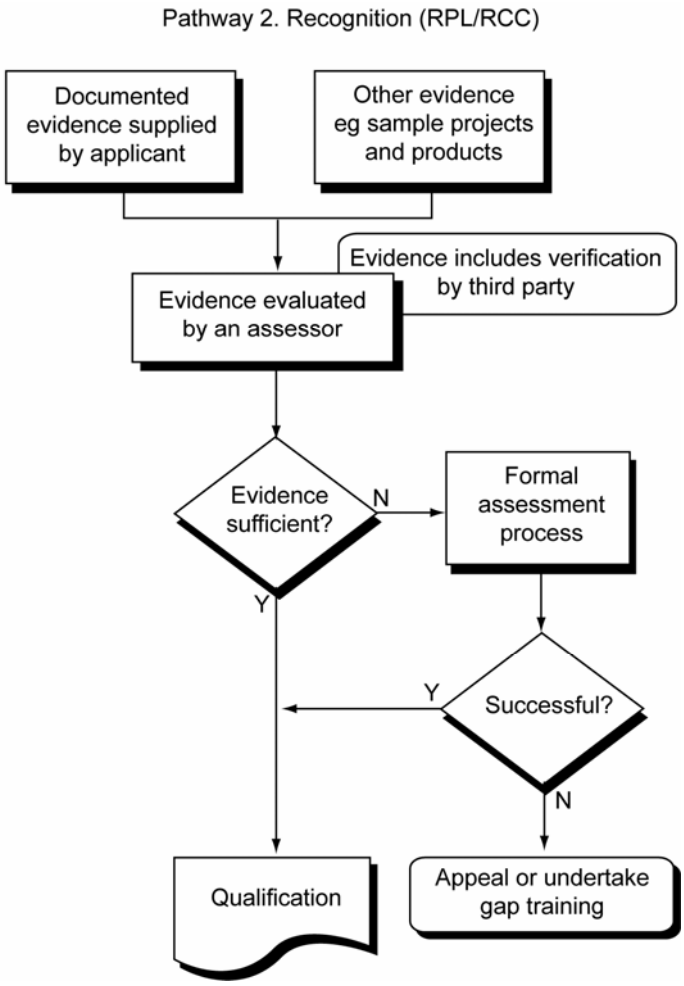
Evidence of Competency

In Pathway 2 many types of evidence can be used to determine competency for the issuance of Qualifications or Statements of Attainment. The evidence may come from records of previous relevant work experience. This type of evidence will need endorsement by a supervisor/mentor skilled in the units for which recognition is sought. Evidence may consist of portfolios such as projects or products completed for other purposes, or from non-registered training programs or ad hoc prior experience, or from overseas programs of a similar nature. Industry would expect this evidence to be assessed by the RTO (or its nominee – a qualified industry assessor). The result will be that the applicant is judged competent for the competency standard unit(s) or gaps are identified and noted. Where a gap is identified, the applicant can either accept the judgement pursue gap training or elect to appeal the decision. Evidence used in the judgement appeal process may include a personal portfolio, curriculum vitae, interview, comments by peers or employers, and challenge tests.

The recognition of a subset of the competency standard units, ie skills, forming a cluster of Statements of Attainment within a Qualification, generally requires individuals to complete the additional units in the relevant Qualification Pathway that provides credit. This information may be developed by the RTO in consultation with respective stakeholders.



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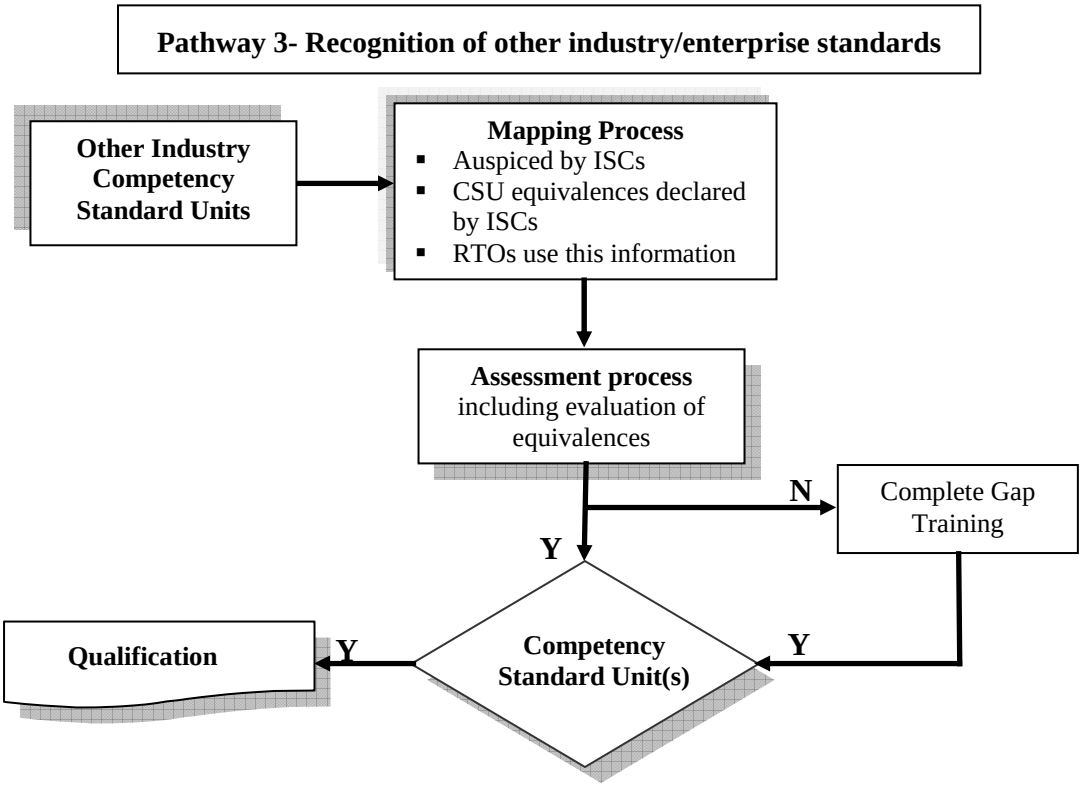
Pathway 3: Recognition of Other Industry/Enterprise Standards

This pathway is for individuals who have developed skills based on other nationally recognised industry or enterprise competency standards and who have received formal recognition in Competency standard unit(s) from these areas. Recognition of equivalence of Competency Standard Units between industries is through an agreed and formal mapping process. Equivalence of outcomes are declared by Industry Skills Councils for respective Training Packages. The recognition of Units, as part of any mapping arrangements is the responsibility of the parties who maintain the competency standards, in this instance EE-Oz Training Standards. RTOs should investigate whether any mapping agreements are in place by contacting the relevant Industry Skills Councils.

Evidence of Competency

In Pathway 3 evidence is based on formally agreed mapping declaration(s) of competency standard units from another Industry against the Electrotechnology unit(s) for which formal recognition is sought. The equivalence mapping declaration agreement is formalised between the respective Industry Skills Councils.

The applicant is required to supply details of the unit(s) held, including any currency, and the unit(s) sought. This includes submitting any assessment reports to the RTO for a determination. This equivalence evidence will be reviewed against the mapping advice obtained by the RTO (or their nominee) and a judgement made. The result will be that the applicant is deemed competent for the unit(s) and a Statement of Attainment issued, or gaps are identified, advised and noted. Where a gap has been identified the applicant can consider the judgement, pursue gap training or appeal the decision. Evidence used in the judgement appeal process is based on the individual's records of achievement relative to the competency standard units for which recognition is sought.



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Learning and Assessment Pathway Integration

New Entrants

Learning and assessment for new entrants is integrated and in part structured, with assessment evidence being collected progressively and feedback being provided to the candidate any time throughout the competency development learning and assessment process. Learning and assessment pathways may include structured programs in a variety of contexts using a range of strategies to meet different learner needs. Structured learning and assessment programs could be group-based, work-based, project-based, self paced, action learning-based; conducted by distance or e-learning; and involve practice and experience in the workplace.

Learning and assessment pathways that suit New Apprenticeships are a mix of formal training and workplace experience. They may be structured but need to take into account:

- typical irregular work activity
- work availability as it affects access to the range of activities required to be covered
- structured formative assessment activities through which candidates can acquire and demonstrate the practical skills and knowledge identified in the relevant competency standards.

The model that best accommodates a learner who has had no prior experiences (new entrant) in the industry is one that recognises that learning is facilitated best in a structured educational program with directed workplace learning activities followed by recurring practice of these activities. That is, the model is based on a combination of on-the-job and off-the-job learning experiences aligned to competency standard unit requirements. It recognises that learning occurs in an active way and should involve appropriate learning strategies. The model provides coherence and integration between respective components. It also represents:

- a most effective and efficient means of effecting quality education and training
- a means of assessing if learning has occurred and competence has been attained.

Competency standard units are specifications of work performance which do not provide specific information about the provision of training or detail as to how assessment activities are to be carried out. Given the nature of the information (content and its interrelationship) contained within the competency standard units, there is the potential for a variety of interpretations to occur when RTOs are designing training programs.

To improve opportunities for consistency in interpretation the industry preferred approach is to support the use of appropriate learning and assessment strategies. To this end it has developed a Guideline Training and Assessment Model detailing the preferred approach. A copy of the model is available from EE-Oz Training Standards.

Assessment-only Pathway or Recognition of Prior Learning Pathway

Competencies already held by individuals can be formally assessed against the competency standard units in this Training Package and should be recognised regardless of how, when or where they were achieved.

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In some circumstances an assessment-only (skills recognition) pathway will be warranted. The candidate provides current, quality evidence against the relevant competency standard unit(s), and the outcomes of the assessment process indicate that the candidate is competent and that structured training is not required.

Candidates wishing to take this pathway present evidence that they possess the skills and knowledge identified in the relevant competency standard unit(s), The assessor then judges whether the candidate is competent. Summative approaches to assessment may be directed by the candidate (such as in the compilation of portfolios), or by the assessor (such as observation of workplace performance, requiring demonstrations of skills, and completion of oral and written testing).

As with all assessment, the assessor must be confident that the evidence indicates that the candidate is currently competent against the endorsed competency standard unit(s),. This evidence may take a variety of forms and might include certification, Industry Skills Council equivalence mapping declarations, references from past employers, testimonials from clients and work samples. The onus is on candidates to provide sufficient evidence to satisfy assessors that they currently hold the relevant competencies. In judging evidence, the assessor must ensure that the evidence is:

- authentic (the candidate's own work)
- valid (directly related to the current version of the relevant endorsed Competency Standard Unit)
- reliable (a range of test instruments will provide the same result for a given candidate)
- current (reflect the candidate's current capacity to perform the aspect of the work covered by the endorsed competency standard unit), and
- sufficient (covers the full range of Elements and Performance Criteria in the relevant competency standard unit and addresses the four dimensions of competency, namely task skills, task management skills, con tangency management skills, and job/role environment skills).

An assessment-only or recognition of prior learning pathway is likely to be most appropriate for:

- candidates participating/enrolling in qualifications who want recognition for prior learning or current competencies
- existing workers
- individuals with overseas qualifications
- recent migrants with established work histories
- people returning to the workplace
- people with disabilities or injuries requiring a change in careerj
- people with existing competencies from allied industry Training Packages.

Note: The pathways listed above are only suggested and should not be used to limit a greater range of candidates seeking assessment.

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Combination of 'Training and Assessment' and 'Assessment-only' Pathways

Where candidates have gained competencies through work and life experience and gaps in their competence are identified, or where they require training in new areas, a combination of approaches may be appropriate. In such situations, the candidate may undertake an initial assessment to determine their current competence using an 'assessment-only pathway'. Once current competence is identified, a structured training and assessment program may be established to ensure that the candidate acquires the required additional competencies or gap. These would be achieved through a 'training and assessment pathway'.

1.3.4 Assessment Principles within the Electrotechnology Industry

These assessment practices must satisfy the principles of assessment.

Assessment Principles

Validity

The assessment instruments and tasks must be designed, implemented and administered in a manner which ensures that:

- they measure the intended the essential knowledge and associated skills with workplace performance requirement
- the evidence gathered relates directly to the competency standard unit(s) being assessed.

Validity includes the need to involve others with expertise in the assessments being implemented, in the development, selection and review of the instruments and in the methods used in the assessment process.

To be valid assessment judgements must be based on more than one task with evidence gathered on a number of occasions and in a variety of contexts or situations.

Reliability

Assessment practices should be in accord with *AQTF Standard 9.2* and undergo constant monitoring and review to ensure consistency in the application of process and interpretation of evidence.

RTOs must ensure clear guidelines are available to assessors to ensure consistent judgements are made based on the evidence provided. Where industry and/or regulatory endorsed training support materials are available, it is recommended that this material is used to support and increase the reliability of assessment. This approach will assist in establishing and maintaining consistency of performance of the essential knowledge and skills and work performance requirements specified in the competency standard units.

Flexibility

Assessments are to cover both the skill and knowledge components of competency as described in the competency standard units without any one assessment method being prescribed. A range of assessment instruments and items should be made available, and

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where appropriate, the time and place of assessment should be determined to suit the availability of resources, assessors and candidates.

Assessment approach and methods should be developed to meet the needs of potential candidates and where appropriate negotiated between the candidate and assessor, however, where supported by the industry for the purposes of enhancing consistency, industry-preferred assessment arrangements should be adopted and used.

Fairness

Assessment methods and practices shall be equitable to all individuals.

Candidates must be made aware of the assessment methods and procedures together with details of the criteria against which they are to be assessed.

Specific needs of individual candidates will be accommodated as is practicable and reasonable adjustment is made while maintaining the integrity of the assessment outcomes based on the Competency Standard Unit(s) being assessed.

Currency

The principle to be applied in the Electrotechnology Industry when determining currency of evidence is that claims are to be fully substantiated through both direct and supporting assessment processes.

Assessment processes must satisfy the requirement for currency in terms of:

1. technology and/or processes
2. date/time of application

Context of Assessment

Competency is to be determined on evidence of having consistently performed across a representative range of specified equipment, processes and activities for the scope of work and/or endorsement for which competency is being sought; autonomously and to requirements. Equivalent evidence from other sources, eg formal assessment, is also acceptable.

Assessments may include the use of industry-supported essential knowledge and associated skills learning specifications structured in a conducive learning environment to facilitate the development of depth and breadth of learning, to aid in retention and to enhance transferability. The industry preference is for a percentile-based graded assessment system. It is preferred that assessing competency be carried out in the workplace, however it can be undertaken in a simulated work environment.

Assessment Judgments

Attributing Competency

The deeming of competency shall be based on evidence that is sufficient, current and authentic, so that a quality low risk judgment can be made based on the assessment principles outlined herein.

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Competencies shall be attributed on evidence showing that the person deemed to be competent is able to undertake the responsibilities for all safety measures, care of technology, plant and equipment, use of standards, manuals and procedures, and care of the environment, directly related to the work function for which such competencies are required.

Note:

1. Where the consequences of unjustifiably or mistakenly deeming a person competent carries a risk of injury to persons, commerce, or damage to property and/or the environment, the level of evidence required for sufficiency is higher than where there is little risk. The risk of attributing competence to an individual should, therefore, form a critical part of the assessment process and methodology. Consideration should be given as to whether all prerequisites and/or co-requisites have been appropriately achieved.

2. The decision to attribute competence differs from training effort and delivery. The decision to attribute competence is based on evidence being present for an assessor to attribute such and not a person in learning. Learners, however, can undertake training in competency standard units without being awarded the competency standard units even when they may not have acquired in the required sequence any of the prerequisite competency standard units. However, they cannot be attributed the competency standard unit until they have acquired the prerequisite.

3. For more detailed information refer to Section 3.9 Guide to Assessment Methods and Items.

Sufficiency of Evidence

In all instances competency is to be attributed on evidence sufficient to show that a person has the necessary skills required for the scope of work. These include:

- **Task skills** – performing individual tasks
- **Task management skills** – managing a number of different tasks
- **Contingency management skills** – responding to irregularities and breakdowns in routines
- **Job/role environment skills** – dealing with the responsibilities and expectations of the work environment including working with others.

Evidence must demonstrate that an individual can perform competently across the specified range of activities and has the essential knowledge, understanding and associated skills underpinning the competency.

Currency of Evidence

Evidence must be relevant to what is outlined in current competency standard units and not outdated or irrelevant.

Note: The deeming of competence at a point in time does not mean that competence exists for all time; competency must be maintained by use and/or retraining. Refer also to Section 3.9 'Guide to Assessment Methods and Items' for more detailed information on currency.

If there have been recent changes in technology, evidence of actions before such change is unlikely to reflect the required currency. Similarly, if the individual claiming competency has not performed/applied the competency for extensive periods of time, documentary evidence would not suffice as a basis of assessment.

Authenticity

Evidence is to be genuine and relate to the person being assessed and no one else.

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By way of supporting and reinforcing both the concept of competency and the competency standard units as the currency for Vocational Education and Training (VET) system, the Electrotechnology Industry embraces the following tenets:

- Assessment (summative or final) is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment.
- It is recognised that in some circumstances, assessment may occur outside the workplace, however this should only occur where necessary. The Industry Skills Council for ElectroComms and EnergyUtilities, EE-Oz Training Standards, has developed an industry Simulation Policy. This can be accessed from the EE-Oz Training Standards website at: www.ee-oz.com.au.
- All persons may claim formal recognition for an assessment of an individual competency standard unit or a group of units.
- All persons have the right to have relevant competencies recognised through the most expeditious assessment system and method.
- Under-represented groups are not biased from participation and access.

1.3.5 Assessment Processes in the Electrotechnology Industry

Within the Electrotechnology Industry **sampling**, **profiling** and **portfolio** are recognised as the three main methods of collecting evidence to assist the assessment processes and, while they are not mandatory, they have become accepted and the preferred industry practice. These guidelines do not provide an extensive technical description of each of these methods, however, it is important to recognise the impact each will have on the management of assessment practices. An overview of each is provided below along with sample templates to assist RTOs in planning, managing and administering training and assessment delivery.

1. Sampling

Sampling requires evidence of competence to be derived from a limited sample of performance event(s). Technical/application skills are normally assessed by practical measures, and knowledge underpinning performance is assessed, typically in conducive learning environments like classrooms, by conventional written or oral questioning.

2. Profiling

Profiling requires the progressive collection of many samples through structured documentation and progress summative reporting. Progressive monitoring of direct and possibly indirect evidence, over an extended period of time is used to assist in intervention and, making judgements about the developing competency profile of the candidate/learner. The focus of evidence collection is set against the Elements, Range Statement and critical aspects detailed in the competency standard units and complemented with the level of supervision applied. The evidence collection process is staged against known and pre-defined work performance outcomes as specified in the competency standard units.

Profiling will assist in obtaining a series of periodical audit assessments and/or a final holistic assessment event where regulatory/licensing requirements apply. Technical educational achievements may be incorporated in the profiling model or augment

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information gathered directly from the workplace into the profile. In the latter case it is preferred that a final summative and holistic assessment event be applied prior to the issuance of the qualification or relevant Statement of Attainment.

Profiling is the industry-preferred model for the assessment of new entrant contracted entry-level employment, eg apprenticeships.

3. Portfolio

The Portfolio approach is best suited to assessment conducted as Recognition of Prior Learning (RPL) and is to be in accord with AQTF Standard 8.2 or its replacement/equivalent. It requires the collection or build-up of indirect evidence as to an individual's competence.

The portfolio of evidence could include Statements of Attainment issued by other RTOs (Mutual Recognition AQTF Standard 5), suitably focused references and testimonials, formal project appraisals, work records and any other evidence which is current and relevant to the competencies sought.

Opportunities for Combined Approaches

The assessment approaches/processes described above may be implemented in combination. The assessment process selected will be acceptable to the industry if:

- the outcome is valid
- the approach supports industry-wide consistency
- the requirements of the competency standard units are satisfied and in accordance with the preferred industry approach
- costs are acceptable to the industry.

1.3.6 Assessor Requirements

This section identifies the mandatory competencies for assessors and clarifies how others may contribute to the assessment process where one person alone does not hold all the required competencies. [Refer to the *Australian Quality Training Framework, Standards for Registered Training Organisations*, Standard 7.3 (a) and (b)]

The integrity of the Electrotechnology Industry assessment processes is centred on the need for all assessments to be conducted under the direction or the authority of an RTO using qualified assessors who may function with or within the RTO.

Within an assessment process, responsibility for some activities may be delegated. As a result not every aspect of assessment must be personally and directly attended to by a qualified assessor. For example, in a long term profiling process the qualified assessor may establish the system and identify the evidence required with an approved industry data-capture information system administrator/manager. They may then cause the evidence to be gathered by others after which they will examine the evidence and make judgments.

For gathering qualitative information the partnership between assessors/other competent persons and the information system administrator/manager is essential. However, it should be noted that technical assessment responsibility and systems accountability may only be exercised by an RTO using qualified assessors.

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Assessor Qualifications

In this Training Package, assessments against the competencies will be carried out in accordance with the endorsed guidelines. The guidelines include the necessary qualifications for those conducting assessments and provide for those situations where more than one person may contribute to the assessment or where the required technical and assessment competencies may not be held by any one person.

Assessors are to be competent in the competencies which they are to assess or are to be assisted by an appropriate subject matter expert who is currently competent in the unit being assessed This includes language literacy and numeracy (LLN), cultural diversity and under-represented groups, environmental and industrial safety and occupational health and safety (OHS).

Assessors (and their subject matter expert) must know current industry practices for the job or the role against which the performance is being assessed, and must practice the necessary interpersonal skills required in the assessment process.

All persons required to *plan, assess, develop or validate* assessment related matters must be currently competent against the competency standard(s) contained in the Training and Assessment Training Package, and comply with AQTF Standards 7.3a and 7.3b for RTOs.

Using Qualified Assessors

All assessment is to be under the authority of a formally qualified assessor. Within this constraint, the RTO may adopt any or all of the following processes:

- using a workplace assessor who is currently competent against the assessor competency standards contained within the Training and Assessment Training Package and the relevant industry vocational competencies.
- using a workplace assessor who is currently competent against the assessor competency standards contained within the Training and Assessment Training Package and who has ready access to another person who is competent in, and can advise the assessor on, the relevant vocational competencies to at least the level being assessed.
- using an assessment panel which includes at least one person who is currently competent against the assessor competency standards contained within the Training and Assessment Training Package as well as at least one person who is competent in the relevant vocational competencies to at least the level being assessed.
- using an external assessor who is currently competent against the assessor standards contained within the Training and Assessment Training Package but with the assessment evidence being collected, utilising industry endorsed assessment procedures, by a workplace supervisor who has the relevant vocational competencies to at least the level being assessed.
- using a workplace supervisor, with the relevant vocational competencies to at least the level being assessed, who utilises industry endorsed assessment procedures with the outcome being validated by an externally qualified assessor who is currently competent against the assessor standards contained within the Training and Assessment Training Package.

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In relation to the new entrant pathway industry would expect that in all instances the RTO will retain the responsibility of managing the competency development training program and related plan, the ultimate attributing of competence against competency standard units using qualified assessors, and the issuance of qualifications, and/or statements of attainment. It will also include providing any additional information that may be required for licensing requirements and specified by regulators or industry.

The process should be undertaken in accordance with the recognition processes defined by relevant training authorities.

Assessor Competencies

The *Standards for Registered Training Organisations* specify mandatory competency requirements for assessors. For information see Standard 7.3 from the *Standards for Registered Training Organisations*:

> 7.3 a The RTO must ensure that assessment are conducted by a person who has:
>
> (i) the following competencies from the Training and Assessment Training Package or is able to demonstrate demonstrated equivalent competencies in:
>
> a TAAASS401A Plan and organise assessment
>
> b TAAASS402A Assess competence
>
> c TAAASS404A Participate in assessment validation
>
> (ii) relevant vocational competencies, at least to the level being assessed.
>
> b However, if a person does not have all of the competencies in Standards 7.3 a (i) and 7.3a (ii) one person with the competencies listed in Standard 7.3a (i) and one or more persons who have the competencies listed in Standard 7.3 a (ii) may work together to conduct assessments.
>
> **Note**: A person who holds the competencies BSZ401A Plan assessment, BSZ402A Conduct assessment, and BSZ403A Review assessment from the Training Package for Assessment and Workplace Training will be accepted for the purposes of this standard. A person who has demonstrated equivalent competencies to BSZ401A and BSZ402A and BSZ403A in the period up to 12 months following publication of the Training and Assessment Training Package will also be accepted for the purposes of this standard.

All assessors who are engaged in assessing against this Training Package must be engaged by an RTO, or be acting under the registration of an RTO (for example, an assessor working in an enterprise, or as a consultant, that has a partnership arrangement with the RTO).

This Training Package provides a range of options for meeting these assessor requirements. Assessments can be undertaken in a variety of workplace and enterprise contexts by individual assessors; partnerships involving assessors and technical experts; and teams of assessors.

The options below show how the requirement to use qualified assessors can be met.

Assessors, Technical Experts and Workplace Supervisors

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Single assessor – Single arrangement

Where an individual assessor conducts the assessment, the assessor is required to:

- hold formal recognition of competence in the relevant units in the Training Package for Training and Assessment
- be deemed competent and, where possible, hold formal recognition of competence in the specific competency standard units in this Training Package, at least to the level being assessed.

In addition, it is recommended by the industry that the assessor can:

- demonstrate current knowledge of the Electrotechnology Industry, industry practices, and the job or role against which performance is being assessed
- demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts
- demonstrate the necessary interpersonal and communication skills required in the assessment process
- continue to meet the requirements of the industry
- ensure assessment is consistent with the Australian Quality Training Framework Standards for Registered Training Organisations
- promote confidence in the system and the assessment outcomes on the part of industry, employers, enterprises, unions, employees, trainees, assessors and trainers
- ensure assessment processes and outcomes are valid, reliable, fair and flexible
- support RTOs in effectively carrying out their responsibilities
- participate in professional development
- have relevant work experience
- participate in professional/industry networks and assessor programs
- have recent planning and review of assessment activities
- participate in assessment validation processes
- have recent assessment and/or workplace training activities.

Partnership arrangements

Option 1 – Working with a Technical Expert

An assessor works with a technical expert to conduct the assessment. The Assessor is required to hold formal recognition of competence in the relevant units in the Training and Assessment Training Package.

In addition, it is recommended that the assessor is able to:

- demonstrate current knowledge and skill in assessing against this Training Package which contains the vocational standards for industry in a range of contexts

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- demonstrate capability to assess with a technical expert
- demonstrate the interpersonal and communication skills required in the assessment process.

A technical expert is someone who is deemed currently competent and, where possible, holds formal recognition of competence in the specific competency standard units from this Training Package, at least to the level being assessed.

In addition, it is recommended that the technical expert is able to:

- demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed
- communicate and liaise with the assessor throughout the assessment process.

Option 2 – Working with a Workplace Supervisor

An assessor works with workplace supervisor in collecting evidence for valid assessment.

An assessor is required to:

- hold formal recognition of competence in training and assessment in the relevant units in the Training and Assessment Training Package
- make the assessment decision.

In addition, it is recommended that the assessor is able to:

- demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts
- demonstrate a capability to assess using a Workplace Supervisor as a valid and reliable source of evidence collaboration
- demonstrate the interpersonal and communication skills required in the assessment process
- communicate and liaise, where appropriate, with the workplace supervisor throughout the assessment process.

A workplace supervisor is someone who is deemed currently competent and, where possible, holds formal recognition of competence in the specific competency standard units from this Training Package, at least to the level being assessed.

In addition, it is recommended that the workplace supervisor is able to:

- demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed
- communicate and liaise, where appropriate, with the assessor throughout the assessment process
- use agreed practices to gather and record evidence for the assessor to use in making a valid judgement on competency.

Team/Panel Assessment

The members of an assessment team/panel have assessment and industry experience and expertise and they work together to conduct the assessment. This involves collecting

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evidence and making judgements about competency. The members of the team must include at least one person who:

- holds formal recognition of competence in training and assessment in the relevant units in the Training and Assessment Training Package
- is deemed competent and, where possible, holds formal recognition of competence in the specific competency standard units under assessment, at least to the level being assessed; and if not technically competent uses team/panel members with current technical competence in requisite units.

In addition, it is recommended that members of the team/panel involved in the assessment are able to demonstrate:

- current knowledge of the industry, industry practices, and the job or role against which performance is being assessed
- current knowledge and skill in assessing against this Training Package in a range of contexts
- the interpersonal and communication skills required in the assessment process and to liaise with other team/panel members throughout the assessment process.

Assessments against the competencies in the Training Package will be carried out in accordance with these endorsed guidelines. The guidelines include the necessary qualifications for those conducting assessments and provide for those situations where more than one person may contribute to the assessment and where the required technical and assessment competencies may not be held by any one person.

1.3.7 Assessment Tools

This section provides an overview of assessment tools and their suggested use in the industry.

Use of Assessment Tools

Assessment resources provide a means of collecting the evidence that assessors use in making judgements about whether candidates have achieved competency.

In some cases, assessors may use prepared assessment materials, such as those specifically developed to support this Training Package – Training and Assessment Advice Manual for the Electrotechnology Training Package, available from EE-Oz Training Standards. Visit the website: (www.ee-oz.com.au). Alternatively they may develop their own assessment materials to meet the needs of their clients by utilising pre-developed training and assessment instruments included in Section 3.8 Electrotechnology Industry Guidelines for designing assessment materials.

Using Prepared Assessment Tools

If using prepared assessment materials, assessors should ensure that the materials are benchmarked or mapped against the current version of the relevant competency standard unit(s) and any industry-preferred model, and supported by the industry. This can be done by checking that the materials are listed on the National Training Information Service (http://www.ntis.gov.au) or EE-Oz Training Standards (www.ee-

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oz.com.au). Specific materials on the list have been noted by the National Quality Council (NQC), as meeting the quality criteria for Training Packages.

Developing Assessment Tools

When developing their own assessment materials, assessors must ensure that the tools:

- are benchmarked against the selected competency standard unit(s)
- are benchmarked against the industry-preferred competency assessment model
- are reviewed as part of the validation of assessment strategies as required under AQTF Standard 9.2i of the *Standards for Registered Training Organisations*
- meet the assessment requirements expressed in the *Standards for Registered Training Organisations,* particularly AQTF Standards 8 and 9.

A key reference for assessors engaged in developing assessment materials is the Training Package for Training and Assessment [TAA04] and TAAASS403A Develop assessment tools.

1.3.8 Assessment Methods

Assessment methods must be appropriate to the situation. Learners can be encouraged to use these methods for self-assessment. Combinations of these methods will be required for most situations, eg observations and oral questioning.

The recommended assessment methods for collecting evidence required to determine the candidate's competency are:

A — oral questioning

B — structured observation of work

C — indirect supporting evidence (supervisor's reports)

It is recommended that assessors use open questions in conjunction with direct observations to assess the candidate's ability to:

- apply relevant knowledge to the particular task
- perform the required tasks safely and efficiently
- handle unforeseen contingencies and circumstances
- recognise and solve problems associated with the whole job (which may not necessarily occur during the assessment).

Supervisor's reports or verified calculations should be used to confirm that workplace job activities have been completed on time and meet the required specifications. This is particularly relevant when the assessor may not be present for the total duration of the workplace job activity and/or the learner/candidate works as part of a team.

For more information see section 3.10 Guide to assessment methods and items.

The range of assessment types listed below can be used individually or in combinations.

Direct observation. Observe the learner carrying out their usual practical tasks in the workplace. This may be accompanied by questions. Direct observation is probably the easiest and most convenient method of assessment.

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Third party reports. Information is provided by the immediate supervisory or other appropriate person(s). An external assessor may not have the opportunity to make multiple observations of a candidate over a period of time, unlike an internal (in-house) assessor. The external assessor may obtain third party reports to supplement an assessment.

Demonstration and questioning. The candidate gives a demonstration of a practical task. If there is no opportunity to observe this competency in the standard work environment, the assessor may ask the candidate to provide a practical demonstration. The assessor can see both the process and the finished product.

Pen and paper tests and essays. These are used to measure the extent of knowledge or may test problem-solving capability. They can complement practical demonstration.

Oral tests. These can be an adjunct to practical demonstration.

Projects. These are usually unsupervised. The assessor uses the final product as a basis for judgement.

Simulation. This may involve an off-site practical test. The actual tasks and conditions are similar to real life situations and are in accord with prevailing industry policy enunciated by the Industry Skills Council for the industry. A Simulation Policy has been developed and can be obtained at www.ee-oz.com.

Portfolios. These are used for assessing skills achieved in the past. They can include work samples.

Profiling. Information is gathered over time from a structured profiled data entry card and resultant report.

Selecting assessment methods is influenced by factors such as the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, safety measures necessary when working with electricity and electrical equipment that add to the critical nature of the competencies being assessed. Sources of evidence need to be as comprehensive as possible in order to minimise error in judgment. Activities associated with normal everyday work contribute to the 'richness' of the evidence data.

When choosing an assessment method and developing assessment instruments, assessors must take into consideration that some skills are more critical to safety and operational requirements than others and some skills are practised more/less frequently. These considerations can be summarised as follows:

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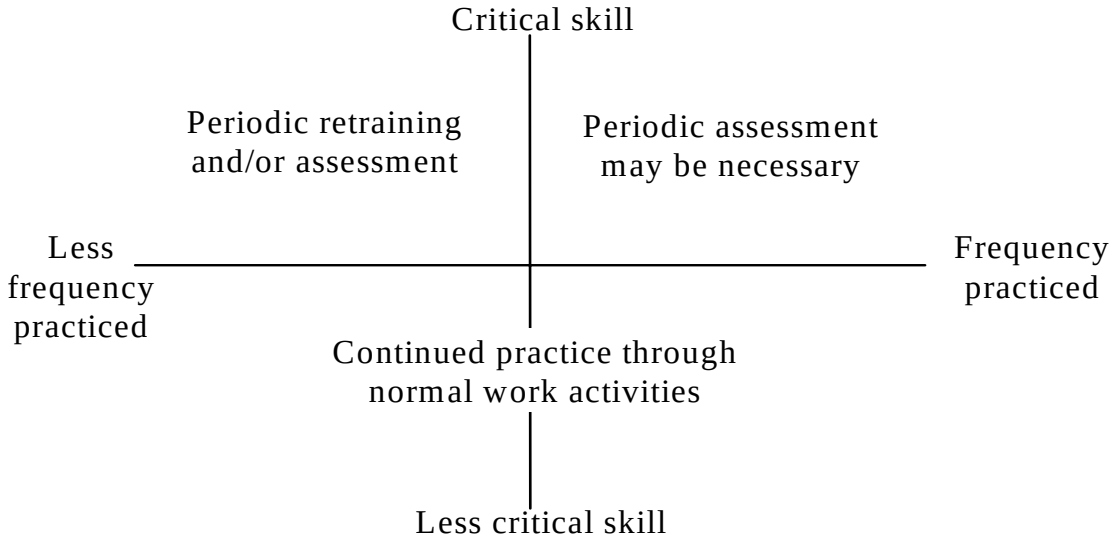
Skill criticality and frequency of practice



Assessment methods and instruments used should satisfy the conditions associated with sufficiency, currency, authenticity, validity, reliability, and be holistic in nature.

The following *Table F.1 – Guide to Assessment Methods and Items* provides a summary of assessment methods in common use and the situations in which they may apply.

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Table – Guide to Assessment Methods and Instruments

Assessment method	Appropriate instruments	Valid purposes or use	Conditions and numbers	Time constraints	Repeat assessments possible
Written objective tests	True/false Multiple choice Matching Completion	Confirming essential factual knowledge, principles Assessing deduction, transfer of knowledge Complementing other methods	Controlled classroom High level supervision Large numbers	Moderate	Many
Written responses, short and extended answers	Calculations Definitions, explanations Essays	Assessing use of information Application of knowledge General ideas and solutions Research, organization and expression of concepts or ideas	Test condition as above or Minimal supervision, and assistance	Moderate	Many
Oral test/ technical interview	Set question Scenarios	Assessing depth and breadth of knowledge Application of knowledge Relative to experience	Interview condition One to one	Moderate	Many
On job or workplace assessment	Observation, checklist Product assessment Questioning to complement observations	Identifying mastery or competence of practical task, technical skill or interpersonal skill in real or simulated setting Identifying gaps in education and training	Normal working conditions Moderate level supervision One to one Avoid expensive or hazardous situations	High	Nil to many depending on assessment of product or process

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Assessment method	Appropriate instruments	Valid purposes or use	Conditions and numbers	Time constraints	Repeat assessments possible
Practical/ Exercises	Stimulated work exercises Structured practical exercises Fault finding exercises	Checking mastery or competence of a practical task, technical skill, or subset of performance in a simulated work setting	Controlled laboratory or field setting High level supervision 10 to 15	Low	Several
Practical projects	Research task or investigation Product or process development Individual learning contract	Assessing integration and application of a number of work related skills to solve a given problem Assessing individual approaches, innovation, creativity Assessing interaction with others	Access to laboratory, workshop or workplace Little supervision 10 to 15	Low	Several
Assignments	Resource life Case studied Poster presentation Reports of video or speaker presentations Reports of laboratory/field work, excursions Individual learning contracts Writing simple manuals or procedures	Confirming competence to research, analyse and synthesise information Assessment of application of knowledge, skills and attitudes where practical testing is not feasible Assessment of communication skills	Moderate of level control Non-test conditions Little supervision 10 to 15	Low	Several
Personal appraisal	Checklists or criteria which enable peer or self assessment	Establishing readiness for summative assessments Assessment of an individual's performance within a team effort	Non-test conditions Little supervision Small numbers	Low	Many
Verbal assessment	Oral exposition or lecture Seminar, presentation and group discussion	Confirming understanding of principles underpinning performance	Moderate level of control High level of supervision One to one	Low	Several

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Assessment method	Appropriate instruments	Valid purposes or use	Conditions and numbers	Time constraints	Repeat assessments possible
	Oral/aural tests Interviews	Supplement to other assessment methods Verification of learner's submitted work.			
Profiling[3]	Structure manual or computer-based log.	Tracks competency development against the industry standard profile specified by CSUs. Identifies when remedial action is required during development period.	[4]Real work conditions under workplace supervision. Off-job assessment events Any number	Low / Medium	On going

[3] A valid profile is based on periodic collection of relevant data over the duration of a competency development training program.
[4] A complete profile is constructed from all required evidence of competency, however where a profile of only workplace performance is used it must be supplemented with other methods such as those outlined in this table.

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1.3.9 Guidelines for Conducting Assessments

Mandatory Assessment Requirements

Assessments must meet, at minimum, the criteria set out in Standard 8 from the *Standards for Registered Training Organisations* which is reproduced below.

8 **RTO Assessments**

The RTOs assessments meet the requirements of the endorsed components of Training Package and the outcomes specified in accredited courses within the scope of its registration.

8.1 The RTO must ensure that assessments, regardless of whether through a training and assessment pathway or an assessment-only pathway:

- i comply with the Assessment Guidelines included in the applicable nationally endorsed Training Package or the assessment requirements specified in accredited courses;
- ii lead to the issuing of a Statement of Attainment or qualification under the AQF when a person is assessed as competent against nationally endorsed Competency Standard Units in the applicable Training Package or any additional information related to knowledge and skills specifications (e.g. modules) prescribed in the applicable accredited course;
- iii comply with the principles of validity, reliability, fairness and flexibility;
- iv provide for applicants to be informed of the context and purpose of the assessment and the assessment process;
- v where relevant, focus on the application of knowledge and skill to the standard of performance required in the workplace and cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills, and include transferable knowledge and skills to new situations and environments;
- vi involve the evaluation of sufficient evidence to enable judgements to be made about whether competency has been attained;
- vii identify issues related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment.
- viii provide for feedback to the applicant about the outcomes of the assessment process and guidance on future options;
- ix are equitable for all persons, taking account of cultural and linguistic needs; and
- x provide for reassessment on appeal.

8.2 a The RTO must ensure that RPL is offered to all applicants on enrolment.

b The RTO must have a RPL process that:

- i is structured to minimise the time and cost to applicants; and
- ii provides adequate information and support to enable applicants to gather reliable evidence to support their claim for recognition of competencies currently held, regardless of how, when or where the learning occurred.

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Access and Equity

An individual's access to the assessment process should not be adversely affected by restrictions placed on the location or context of assessment beyond the requirements specified in this Training Package.

Reasonable adjustments can be made to ensure equity in assessment for people with disabilities. Adjustments include any changes to the assessment process or context that meets means the individual needs of the person with a disability, but do not change competency outcomes. Such adjustments are considered 'reasonable' if they do not impose an unjustifiable hardship on a training organisation or employer. When assessing people with disabilities, assessors are encouraged to apply good practice assessment methods with sensitivity and flexibility.

Industry-preferred assessment process

The following describes the industry-preferred process for conducting assessments against the competency standard unit(s) in this Training Package. This process applies to all assessments conducted for the purposes of national recognition in both institutional and workplace contexts.

Assessment within the Electrotechnology Industry must be carried out by a qualified assessor trained in the conduct of assessment.

- Assessment should be planned, arranged and organised well in advance of the event/process.
- The candidate should be involved in the planning and preparation so that their readiness and availability is assured, and their advice on evidence collection opportunities may be considered.
- The environment within which assessment is to occur is acceptable to the parties and conducive to the assessment process.
- The assessor's actions throughout the process are firm, fair, friendly and unambiguous.
- Specific rulings on safety breaches are explained up-front and acted on in accordance with the assessment materials.
- The assessment process should contain no surprises for any party.
- Feedback is provided as required throughout the assessment process.
- Post assessment activities including recording, reporting, counselling etc. are finalised promptly.

Candidates are more likely to accept the outcomes of an assessment process in which:

- they consider they were treated fairly, consistently and with dignity
- they were given the full opportunity to demonstrate their capabilities
- the reasons for the assessment decisions were appropriate, logical and constructively explained
- the assessment judgements are conveyed in a sensitive and constructive manner.

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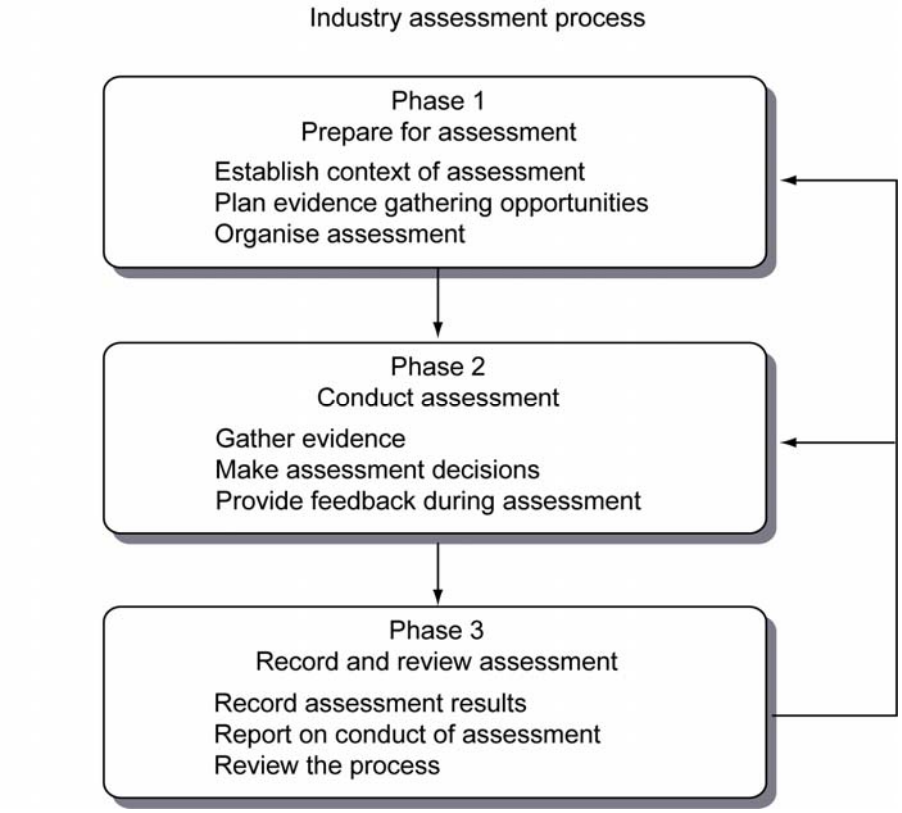
Below is an overview for assessment within the Electrotechnology Industry. It outlines the process involved in conducting assessment in both the institutional and workplace context, and consists of three major components that each assessor will need to do.



Phase 1 Prepare for assessment

The assessor:

- establishes the context and purpose of the assessment
- identifies the relevant competency standard unit(s), assessment guidelines and qualification framework in this Training Package, including the relevant performance measures applying to assessment
- identifies any NTQC-noted support materials that have been developed to facilitate the assessment process
- analyses the competency standards and identifies the evidence requirements
- identifies potential evidence collection methods
- identifies issues related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment.

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Prepare the candidate

The assessor meets with the candidate to:

- discuss and confirm the purpose of assessment with the candidate and, where appropriate, the employer
- explain the context and purpose of the assessment and the assessment process
- explain the competency standards to be assessed and the evidence to be collected and ensure the candidate has access to the relevant competency standards and any other relevant information
- explain and obtain agreement to the assessment procedure
- advise on self-assessment, including processes and criteria
- outline the assessment procedure, the preparation the candidate should undertake, and answer any questions.
- assess the needs of the candidate and, where applicable, negotiate reasonable adjustment for assessing people with disabilities without compromising the integrity of the competencies
- seek feedback regarding the candidate's understanding of the competency standard unit(s), evidence requirements and assessment process
- determine if the candidate is ready for assessment and, in consultation with the candidate, decide on the time and place of the assessment
- develop an assessment plan
- discusses the Electrotechnology Industry and enterprise assessment policy with the candidate, ie how the competencies to be assessed fit in with the industry training policy and preferred framework or enterprise arrangements for training and assessment. The assessor should also discuss what the candidate has done to acquire the knowledge and skills.

Plan and prepare evidence-gathering process

Practical assessment should preferably be conducted on site. However, if on-site practical assessment is not possible then off-site assessment at a mutually agreeable site could be appropriate. It can be part of the current work, ie the observation of current tasks or a demonstration, ie a simulated task.

The assessor must:

- establish a plan for gathering sufficient quality evidence about the candidate's performance in order to make the assessment decision (and involve industry representatives in the development of plans for the validation of assessment)
- identify opportunities to gather evidence of competence which occurs as part of the workplace activities
- ensure the planned approach to gathering evidence will provide sufficient, reliable, valid and fair evidence of competence

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- source or develop assessment materials to assist in the evidence gathering process
- choose the techniques that will be used to assess the candidate's knowledge and skill
- organise equipment or resources required to support the evidence gathering process
- check that the assessment environment allows for fair, valid and reliable assessment and that it is safe and accessible
- inform other relevant people of assessment plans
- coordinate and brief other personnel involved in the evidence gathering process
- identify the need to gather additional evidence which may not occur as part of workplace activities
- consider issues related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment.

Phase 2 Conduct the assessment

Collect the evidence and make assessment decisions

The assessor must:

- establish and oversee the evidence gathering process to ensure its validity, reliability, fairness, flexibility and consistency.;
- collect appropriate evidence and assess this against the Elements, Performance Criteria, Range Statement and Evidence Guide in the relevant competency standard unit(s)
- evaluate evidence in terms of the four dimensions of competency – task skills, task management skills, contingency management skills and job/role environment skills
- incorporate allowable adjustments to the assessment procedure without compromising the integrity of the competencies
- evaluate the evidence in terms of validity, consistency, currency, equity, authenticity and sufficiency
- gathers evidence related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment
- consult and work with other staff, assessment panel members or technical experts involved in the assessment process
- document the evidence gathered in accordance with the assessment procedure and record details of evidence collected
- make a judgement about the candidate's competency based on the evidence and the relevant competency standard unit(s) and the criteria specified in the assessment procedure.

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Provide feedback on the assessment

The assessor must provide advice to the candidate about the outcomes of the assessment process. This includes providing the candidate with:

- clear and constructive feedback on the assessment decision
- information on ways of overcoming any identified gaps in competency revealed by the assessment
- the opportunity to discuss the assessment process and outcome
- information on reassessment and the appeals process.

Phase 3 Record and review assessment

Record and report results

The assessor must:

- record the assessment outcome according to the policies and procedures of the RTO
- maintain records of the assessment procedure, evidence collected and the outcome according to the policies and procedures of the RTO
- maintain the confidentiality of the assessment outcome
- organise the issuing of qualifications and/or Statements of Attainment according to the policies and procedures of the RTO.

Review assessment process

On completion of the assessment process, the assessor must:

- review the assessment process
- report on the positive and negative features of the assessment to those responsible for the assessment procedures
- if necessary, suggest to appropriate personnel in the RTO ways of improving the assessment procedures.

Participate in the reassessment and appeals process

The assessor must:

- provide feedback and counsel the candidate, if required, regarding the assessment outcome or process, including guidance on further options
- provide the candidate with information on the reassessment and appeals process
- report any disputed assessment decision to the appropriate personnel in the RTO
- participate in the reassessment or appeal according to the policies and procedures of the RTO.

Review and maintenance of the assessment system

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The developer and custodian of this Training Package (EE-Oz Training Standards) is responsible for the ongoing monitoring and review of these Assessment Guidelines. This process will be incorporated in the general review and maintenance of this Training Package.

1.3.10 Guidelines for Designing Assessment Materials

Assessment materials are developed, designed and implemented by appropriately authorised and competent assessors. The materials may range from relatively straight forward questions/answers and task tests to quite elaborate simulations for assessing concepts and values. Assessment materials should facilitate the process of assessment by:

- detailing the personnel and material preparations required to support the assessment process
- establishing and/or confirming the circumstances under which the assessment is to take place
- detailing the evidence to be collected and the method(s) to be used to do this
- providing for the systematic review/analysis of the evidence and for the making of logical and supportable judgments
- providing the means for recording the process and the judgments as required and in accordance with any regulatory and/or industry preferred arrangement
- providing a basis for post-assessment
- providing counselling and guidance for the candidate
- identify specialist technical advice related to such things as OHS, LLN, environmental and equity matters.

Assessment Material Design Process

The three Phases in the process of designing assessment materials are:

1. Determine assessment requirements. This includes identifying appropriate assessment tools and methods
2. Develop assessment tools and methods. This involves designing and/or modifying, tools, and preparing instructions
3. Trial and review assessment tools. This includes ratifying procedures and making improvements.

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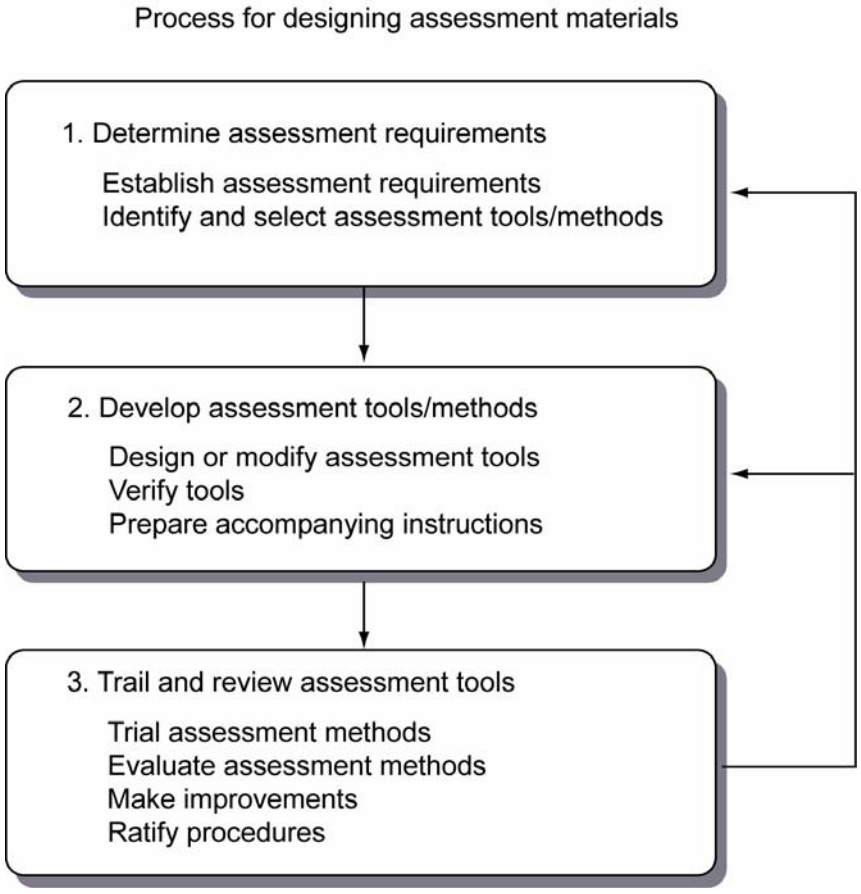

a) Determine assessment requirements

Identify assessment requirements. In the development of tools and methods of assessment, the assessor will need to determine the range of methods appropriate to the assessment context and the characteristics of the person being assessed. The assessor may use the following questions when designing the assessment method:

1. Is the data gathering process sufficient, timely, valid and reliable to ensure the decision about competence relates to the overall requirements of the unit?
2. Do you always need to assess real work?
3. How is the critical evidence specified?
4. How many assessment tasks are required to collect the critical evidence of competency?
5. Which assessment tasks will provide broad coverage of the Range Statement?
6. Are there any skills that the candidate should have or can develop before they are assessed for the unit?

Identify and select assessment tools/methods. The assessor must identify and select the assessment methods consistent with Electrotechnology Industry assessment guidelines and procedures.

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b) Develop assessment tools/methods

Design or modify assessment tools. The assessor must design or modify existing assessment tools so that their format, language, literacy and numeracy requirements are appropriate to the characteristics of the assessment context and the person being assessed.

Verify tools. The assessor must verify the assessment tools, which maintain validity but are easy to administer, and allow sufficient flexibility to meet the range of possible assessment contexts.

Prepare accompanying instructions. The assessment system/process must be comprehensively and clearly documented so that the stages of assessment and their constituent parts may be observed and evaluated. The assessment materials must relate directly to the competency standard unit or group of units making up a qualification and address the totality of competency in a realistic, holistic and effective way.

c) Trial and review assessment tools

Trial and validate assessment tools. The assessor must trial and validate the assessment methods with a representative group of people similar to those who will ultimately be assessed. Once trials are conducted the assessor must seek responses from all parties and compile and analyse these responses.

Evaluate assessment methods. The assessor must evaluate the assessment methods and tools for clarity, reliability, validity, fairness and cost-effectiveness.

Make improvements. The assessor must modify the assessment tools based on the responses to the trials.

Ratify procedures. The assessor must ratify, with relevant people in the industry, procedures related to evidence requirements, assessment methods and assessment tools, and the processes used in developing them.

Assessment Material Requirements

Essential requirements to be met by assessment materials include the following:

Assessment of competency standard units. Assessment must directly address the competency standard unit or group of units making up a qualification or skills cluster and, within this, satisfy the *critical aspects of evidence,* including the related Performance Criteria, Range Statement and essential knowledge and associated skills.

Assessment of practical applications. Summative assessment of practical applications should, whenever possible and practicable, be conducted in a real work environment or in a realistically simulated work environment. Removal of the summative assessment from the real work environment should occur only to the extent necessitated by circumstances such as safety, noise, excessive cost and disruption to equipment operation, and access to the required work.

Learning outcomes or other curricula documents. Outcomes are not to be the primary focus of summative assessment unless their direct relationship to the Competency Standard Unit(s) is formally approved by industry and recorded.

Assessment of essential theory. Summative assessment of the theory (essential knowledge and associated skills) underpinning competent performance is to be sufficiently rigorous and searching to ensure that individuals comprehend why they are

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doing something, the options they may use to achieve the required goal, and the fact that they can recall and/or locate and, interpret and transfer this information in varying contexts if it is needed at some other time. Typically, the specific level of depth and breadth the individual is required achieve is contained in industry and RTO sponsored essential knowledge and associated skills learning specifications that are aligned to respective competency standard units.

Assessment of under-represented groups or learners with low language, literacy or numeracy skills. Assessment systems must be able to be used for under-represented groups or in cases where learners have low language, literacy and/or numeracy skills. Reasonable adjustment strategies for these groups should be included in any assessment materials used by RTOs (which should be consistent with the quality assurance requirements of State Training Authorities for registration).

Assessment instruments to support training and assessment material design

See Appendix B *Sample assessment instruments to support training and assessment material design* for information on assessment material design, training and assessment activities and sample assessment materials.

1.3.11 Maintenance of Assessment Guidelines

The Electrotechnology Industry Assessment Guidelines were developed and are owned by the industry. The guidelines must be maintained so that they reflect the ongoing needs of the industry sector and respond in a timely manner to changed technologies, work organisation, skills development and related circumstances.

Responsibility for maintaining the Assessment Guidelines is shared by the parties who constitute the sector.

- The maintenance of Assessment Guidelines will be coordinated and managed by EE-Oz Training Standards in its role as a declared Industry Skills Council for ElectroComms and EnergyUtilities
- Suggestions and proposals for changes from all parties are welcome. These should be documented and submitted to EE-Oz Training Standards the DEST declared Industry Skills Council for the ElectroComms and EnergyUtilities Industry.

1.3.12 General Resources

Australian Quality Training Framework (AQTF) – for general information go to: http://www.dest.gov.au/sectors/training_skills/policy_issues_reviews/key_issues/nts/aqtf/what.htm

Australian Quality Training Framework (AQTF) – for resources and information go to: http://antapubs.dest.gov.au/publications/publication.asp?qsID=86

Australian Quality Training Framework *Standards for* Registered *Training Organisations*, Australian National Training Authority, Melbourne, 2001. Available in hard copy from DEST or can be downloaded from http://antapubs.dest.gov.au/publications/publication.asp?qsID=86

Training Package Development Handbook, Department of Education Science and Training, Canberra, 2006. Can be downloaded from

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http://www.dest.gov.au/sectors/training_skills/publications_resources/profiles/Training_Package_Development_Handbook.htm

BSZ98 *Training Package for Training and Assessment*. This is available from the following organisations and can be viewed, and components downloaded, from the National Training Information Service (NTIS). National Training Information Service, an electronic database providing comprehensive information about RTOs, Training Packages and accredited courses. (http://www.ntis.gov.au/)

Assessment Resources

Training Package Assessment Guides are a range of resources to assist RTOs in developing Training Package assessment materials. This project was one of several initiatives managed by the Australian Government and funded by the Department of Education, Science and Training (DEST) to facilitate the implementation of Training Packages and in particular Australian Apprenticeships. It is made up of 10 separate titles, as described at http://www.training.com.au/portal/site/public/menuitem.ad0d788e23b8ac80f9fa5a1017a62dbc/

Go to http://www.resourcegenerator.gov.au/loadpage.asp?Page=TPAG.htm

Assessment Tool Design and Conducting Assessment

VETASSESS and Western Australian Department of Training and Employment, 2000, Designing Tests – Guidelines for designing knowledge based tests for Training Packages.

Vocational Education and Assessment Centre 1997, Designing Workplace Assessment Tools, A self-directed learning program, NSW TAFE.

Manufacturing Learning Australia, 2000, Assessment solutions, Australian Training products, Melbourne.

Rumsey, David 1994, *Assessment practical guide*, Australian Government Publishing Service, Canberra.

Assessor Training

Australian Committee on Training Curriculum (ACTRAC), 1994, Assessor training program - learning materials, Australian Training products, Melbourne.

Australian National Training Authority, A Guide for Professional Development, ANTA, Brisbane; or its replacement – contact DEST www.dest.gov.au for more information.

Australian National Training Authority, Facilitator Packs for Certificate IV in Training and Assessment; or its replacement – contact DEST www.dest.gov.au for more information.

Australian National Training Authority, Facilitator's Pack for Train Small Groups and Assessment; or its replacement – contact DEST www.dest.gov.au for more information.

Australian Training Products Ltd, Training and Assessment, Training Package — Toolbox; or its replacement – contact DEST www.dest.gov.au for more information.

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Green, M., Moritz, R., Moyle, K. and Vale, K., 1997, Key competencies professional development Package, Department for Education and Children's Services, South Australia.

Victorian TAFE Association, 2000, The professional development CD: A learning tool, VTA, Melbourne.

Conducting Assessments

Bloch, B. and Thomson, P., 1994, *Working Towards Best Practice in Assessment: A case study approach to some issues concerning competency-based assessment in the vocational education and training sector*, NCVER, Adelaide.

Docking, R., 1991, *An A-Z of Assessment Myths and Assessment in the Workplace, Competence assessment briefing series*, No. 4, Employment Department, Perth, Western Australia.

Hawke, Geoff, 1996, Integrating Assessment of Learning Outcomes, Assessment Centre for Vocational Education, Sydney.

Hawke, Geoff, 1995, *Work-based Learning: Advice From Literature*, Assessment Centre for Vocational Education, Sydney.

National Assessors and Workplace Trainers Body, *Putting it into practice* [Training Package implementation Guide].

Parsloe, E., 1992, *Coaching, Mentoring and Assessing: A practical guide to developing competence*, Kogan Page, London.

Rumsey, David, 1993, "*Practical issues in Workplace Assessment*" in National Assessment Research Forum: A forum for research into competency-based assessment. [VEETAC Competency Based Training Working party Assessment Steering Group], NSW TAFE Commission, Sydney.

Rumsey, David, 1994, *Assessment Practical Guide*, Australian Government Publishing Service, Canberra.

Evidence-Gathering Methods

Australian National Training Authority, 1998, *A new assessment tool*, ANTA, Melbourne. http://antapubs.dest.gov.au/publications/publication.asp?qsID=28 **OR** http://www.dest.gov.au/sectors/training_skills/publications_resources/profiles/anta/profile/a_new_assessment_tool.htm

Gonczi, A. (ed.), 1992, *Developing a competent workforce: adult learning strategies for vocational education and training*, TAFE National Centre for Research and Development, Adelaide.

Kearney, Paul, 1992, *Collaborative assessment techniques*, Artemis, Tasmania.

National Assessors and Workplace Trainers Body, *The evidence resource kit – containing language, literacy and numeracy video and CD ROM*

National Assessors and Workplace Trainers Body, *The evidence workbooks*

Assessment System Design and Management

Office of Training and Further Education 1998, *Demonstrating best practice in VET project – assessment systems and processes*, OTFE Victoria.

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Toop, L., Gibb, J and Worsnop, P, *Assessment system designs*, Australian Government Publishing Service, Canberra.

Western Australia Department of Training and VETASSESS 1998, *Kit for Skills Recognition Organisations*, WADOT, Perth

National Centre for Vocational Education and Research, 1996, *Integrating assessment: removing the on the job/off the job gap*, Conference papers from 4-6 June, Western Australian Department of Training.

OTFE, 1998, *Demonstrating best practice in VET project – assessment systems and processes*, Victoria.

Wilson, P., 1993, *Integrating workplace and training system assessments*, Testing Times Conference, NCVER, Sydney.

Field, l., 1995, *Managing organisational learning*, Longman, Melbourne.

Recognition of Current Competency/ Recognition of Prior Learning

Recognition and Assessment Centre, 1994, *New place: Same Skills. A guide for people from non-English speaking backgrounds*, Office of Multicultural Affairs, DEET.

Recognition and Assessment Centre, *A Flexible Approach to Recognition Practices*: RPL as a Framework, Melbourne Recognition and Assessment Centre, PO Box 299, Somerton, Vic 3062, Telephone (03) 9254 3000.

1.3.13 Further Sources of Information

This section provides a listing of useful contacts and resources to assist assessors in planning, designing, conducting and reviewing assessments

Contact	Details
National Industry Skills Council (ISC) for the ElectroComms and EnergyUtilities Industry	EE-OZ Training Standards Ground floor, 68 Campbell Street SYDNEY NSW 2010 Telephone: 02 9280 2566 Fax: 02 9280 1600 Email: ee-oz@ee-oz.com.au Website: www.ee-oz.com.au
Western Australia ITC	**WA IEU ITC Inc** P O Box 597 BALCATTA WA 6021 Tel: 08 9240 2688 Fax: 08 9240 2930 E-mail: roberts@ieu.com.au

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Contact	Details
New South Wales ITAB	**NSW U&E ITAB** Ground floor, 68 Campbell Street SYDNEY NSW 2010 Tel: 02 9280 2986 Fax: 02 9211 6870 Email: nswueitab@ozemail.com.au
Victoria	**EPIC Industry Training** 29 Drummond St CARLTON VIC 3053 Tel: 03 9654 1299 Fax: 03 9654 3299 Email: epicitb@epicitb.com
Tasmania	**Energy Skills Australia (TEU ITB)** Unit 4/40-50 Innovation Drive DOWSING POINT TAS 7010 Tel: 03 6273 4445 Fax: 03 6273 4446 Email: teuitb@bigpond.com
South Australia	**Electrical, Electrotechnology, Energy & Water Skills Board** 17 Wirriga St REGENCY PARK SA 5010 Tel: (08) 8347-4008 Fax: (08) 8219-0015 Email: admin@eeewsb.com.au
Queensland	**QUSITAB** PO Box 160 COOPERS PLAINS QLD 4108 Tel: 07 3216 9604 Fax: 07 3345 8346 Email: qusitab@qusitab.com.au

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Contact	Details
Northern Territory	**Major Industries Training Advisory Council** GPO Box 1610 DARWIN NT 0801 Tel: 08 8981 0077 Fax: 08 8941 7470 Email: mitac@mitac.org.au

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Access to Assessment Resources

Learning Resources

EE-Oz Training Standards

Ground floor,
68 Campbell Street
SYDNEY NSW 2010
Telephone: 02 9280 2566
Fax: 02 9280 1600
Email: ee-oz@ee-oz.com.au
Website: www.ee-oz.com.au

Australian Training Products Ltd

Level 25, 150 Lonsdale Street
MELBOURNE VIC 3000
PO Box 5347BB
MELBOURNE VIC 3001
Telephone: (03) 9655 0600
Fax: (03) 9639 4684
Website: http://www.atpl.net.au
Email: sales@atpl.net.au

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Appendix A – New Apprenticeships

New Apprenticeships are work-related competency programs designed for entry level contracted employment for new entrants to the industry. All qualifications in this Training Package could be open to use as New Apprenticeships and are governed by State/Territory Training Authority arrangements and their limitations.

New Apprenticeships offer both employers and employees:

- relevant training
- a range of support service arrangements.

Typically they involve paid work and structured training and are underpinned by a training contract, which is registered with the relevant State/Territory Training Authority. Completion of the competency development program leads to an AQF qualification.

Like traditional apprenticeships, New Apprenticeships involve a commitment from:

- the employer to provide an environment for systematic training of the New Apprentice
- the New Apprentices to apply themselves to learning the requirements of their vocation
- a Registered Training Organisation (RTO)[5] to be responsible for providing the vocational education, training and assessment support services and the eventual issuing of a national qualification

In the Electrotechnology Industry, New Apprenticeships are available for all the qualifications outlined in this Training Package. New Apprentices seeking one of the national qualifications will be required to undergo a training program or course of study that involves learning and assessment activities. The related learning and assessment activities are documented and involve:

- the employer
- the employee
- the RTO.

On successful completion of the training program or course of study, an RTO will issue the New Apprentice a national qualification.

Entry Requirement

Under New Apprenticeships, the employer is able to determine the relevant employment criteria for recruiting a new entrant into the Electrotechnology Industry. The choice, however, is usually dependent on enterprise employment practices and needs, including requirements that may be imposed by relevant regulations and codes of practice.

In some instances, and subject to any relevant State/Territory Training Authority arrangements, existing non-apprenticed workers may be eligible for New

5 TAFE Institutions, universities with TAFE sectors, Skills Centres and similar enterprises that can deliver vocational training are eligible to become RTOs. For more information on RTOs see DEST's 2005 *Australian Quality Training Framework Standards for Registered Training Organisations*, effective from 1 July 2005 publication.

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Apprenticeship opportunities. Inquiries with the relevant State/Territory Training Authority should be made in this regard.

There is a common set of attributes/profiles that are preferred by the industry for the recruiting of New Apprentices.

- Any person aged 15 years or more can apply for a New Apprenticeship.
- Most employers require applicants who have completed at least Year 10 of a secondary school education program.
- Employers customarily prefer applicants who have successfully completed Years 11 or 12 of a secondary school education program or a post secondary education pre-employment course.

Potential entrants should be aware that employers are looking for the following personal attributes:

- effective numeracy and literacy skills
- effective communications skills
- acceptable presentation
- punctuality
- a positive attitude
- interest in the industry as a career
- ability to work at heights or in confined spaces and around moving machinery
- ability to distinguish between colours.

The terms and conditions for New Apprenticeship training require a training agreement or contract, called an Apprenticeship/Traineeship Training Contract, provided by State/Territory Training Authorities and setting out the responsibilities of the parties to the contract.

Parties to the Apprenticeship/Traineeship Training Contract select the appropriate qualification, appropriate competency standard units and adopt an industry-preferred model or design a new training plan/program. A relevant qualification needs to be determined in accordance with the completion requirements and must be agreed to between the respective parties. Competency standard units used to make up a qualification must be appropriate to:

- the work being performed/to be performed by the person seeking the qualification
- the level and integrity of the qualification sought.

The employment of an apprentice (sometimes also called a trainee) by an employer is subject to the relevant legislation and any applicable industrial instrument, order or determination made under that related Statutory Act. Appropriate information should be obtained from relevant authorities in this regard.

General principles governing the Competency Development Program

In consultation the RTO, the employer and the apprentice/trainee reach agreement on the Competency Development Program that will be delivered. Typically the RTO will adopt the industry-preferred approach where regulatory arrangements are in place or will design an appropriate program in discussion with the industry. The

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apprentice/trainee would be expected to undertake the Competency Development Program in order to attain competence in the given qualification.

The Competency Development Program

The training contract, developed in consultation with the RTO(s) provides a description of the process for undertaking training during the life of the training program. The training plan will outline the required on and off-the-job arrangements that apply to it.

The Training Program

1. **Expected duration of workplace program in hours**

   The training program will detail the anticipated time in hours that the apprentice/trainee is expected to work in order to gain the necessary competencies. Information regarding the suggested nominal duration for AQF levels of New Apprenticeships is available from respective parties to the contract including EE-Oz Training Standards.

2. **On-the-job skills development program**

   In consultation with the apprentice/trainee and employer, the RTO provides advice on how evidence is to be gathered when the apprentice/trainee is in the workplace. Apprentices/trainees are expected to assist RTOs in gathering and submitting workplace evidence in line with the industry-preferred approach. This is particularly important where regulatory arrangements are in place. RTOs in turn monitor the performance of the apprentice/trainee and provide appropriate feedback to them and the employer.

3. **Off-the-job skills development program**

   The training contract will detail, where applicable, the off-the-job (technical education) program the RTO will deliver to provide the necessary underpinning skills and knowledge. For example where modules or essential knowledge and associated skills strategies apply, the number, title and duration of each will generally be advised. This will also include the expected duration of the technical educational program in hours. Typically this is a program preferred by the industry.

Typical duration of New Apprenticeships

A range of influencing factors, including NTQC policy, help to determine the typical period of employment and related training for individuals seeking a qualification, using the Australian Qualification Framework (AQF).

Detailed information on typical new apprentice durations, at each of the AQF levels is available from EE-Oz Training Standards. This detail can be obtained directly from EE-Oz Training Standards or found on the EE-Oz Training Standards website at www.ee-oz.com.au. Additionally, more specific information may be contained within any related support materials that may exist as non-endorsed components of this Training Package and in particular the industry-preferred training plan applicable to each qualification.

As a general rule it is expected that new entry-level recruits require a ‘nominal duration’ of training to satisfy the outcomes of competency standard units. Nominal duration is usually defined by State/Territory and Federal Training Authority policies and/or regulations, set out in State/Territory Training Package Implementation Guides. For

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information refer to the relevant Training Package Implementation Guide which can be accessed via the State/Territory Training Authority websites.

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Appendix B – Sample Assessment Instruments

These instruments are designed to Support Training and Assessment Material Design

This Appendix provides advisory and sample information for assessment material design, primarily training and assessment activities that can be used to benchmark quality outcomes. It also contains information on resources available to support implementation of the Training Package, how these resources relate to the workplace and where they can be obtained.

The sample assessment tools (sample instruments) in this Appendix were developed:

- to assist those involved in benchmarking activities designed to gather evidence about workplace tasks and experiences for training and assessment purposes
- specifically for documenting workplace experiences related to the requirements of this Training Package.

The assessment strategies and instruments are primarily for use as advisory information for workplace assessors and/or their agents (workplace supervisors or technical experts) who may be employees of Registered Training Organisations or enterprises.

This Appendix should be read in conjunction with the following publications:

- The respective volumes of this Training Package
- Training Package for Training and Assessment TAA04
- Training Acts and Regulations in the relevant Australian State/Territory
- Policies of the RTO involved with training and assessment for the industry.

See Appendix A Glossary of Terms for the meaning of specific terms used.

Competency Development Models

This section introduces competency development and/or recognition models based on combined on and off-the-job training and a model that allows individuals to have previous learning and work experience recognised.

Combined on and off-the-job competency development model

This model is structured around a new entry level learner undertaking a full competency development program. It recognises that learning occurs as a result of:

- experience in recurring workplace events
- directed workplace learning activities
- structured off-the-job essential knowledge and associate skills technical educational activities.

The model is a simplified version of the detailed contracted new entry level industry-preferred competency development model. A detailed copy of this model is available from EE-Oz Training Standards website at www.ee-oz.com.

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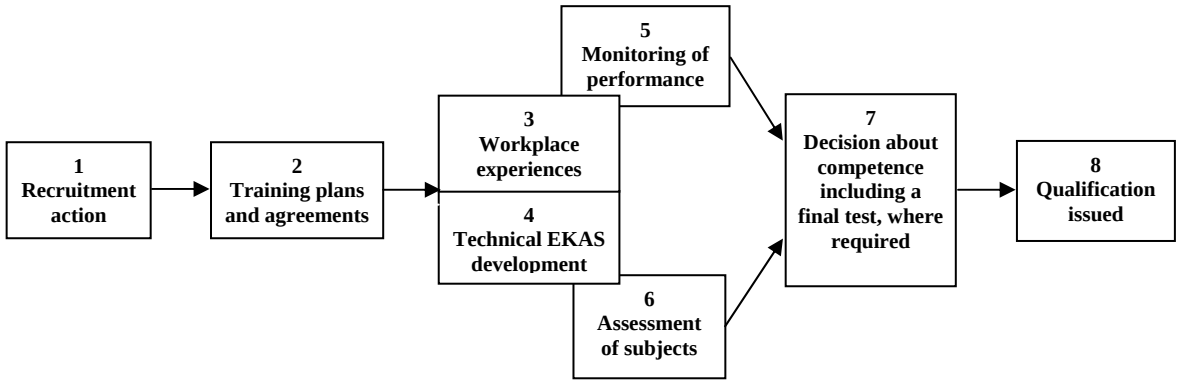

Competency Development Model

This model can accommodate the assessment of prior learning within the continuum of new entrant to competent. In this way it is consistent with the Assessment Pathways outlined in this Assessment Guidelines part of the Training Package.

New entrant competency development model

In designing training and assessment materials and resources to support new entrant competency development, consideration should be given to the preferred industry approach to learner development, in particular

- recognising learning, eg the trainee has completed some aspects but not all the competency standard unit(s) required
- providing information that is transferable to other environments in the industry.

The concept model detailed on the next page explores how training and assessment materials and resources may be best developed for one or more competency standard units.

Using this approach an RTO can ensure increased consistency in

- meeting the specifications in learning and work performance against the competency standard units
- developing the learner in a cost effective way with little disruption to the day-to-day operation of the workplace.

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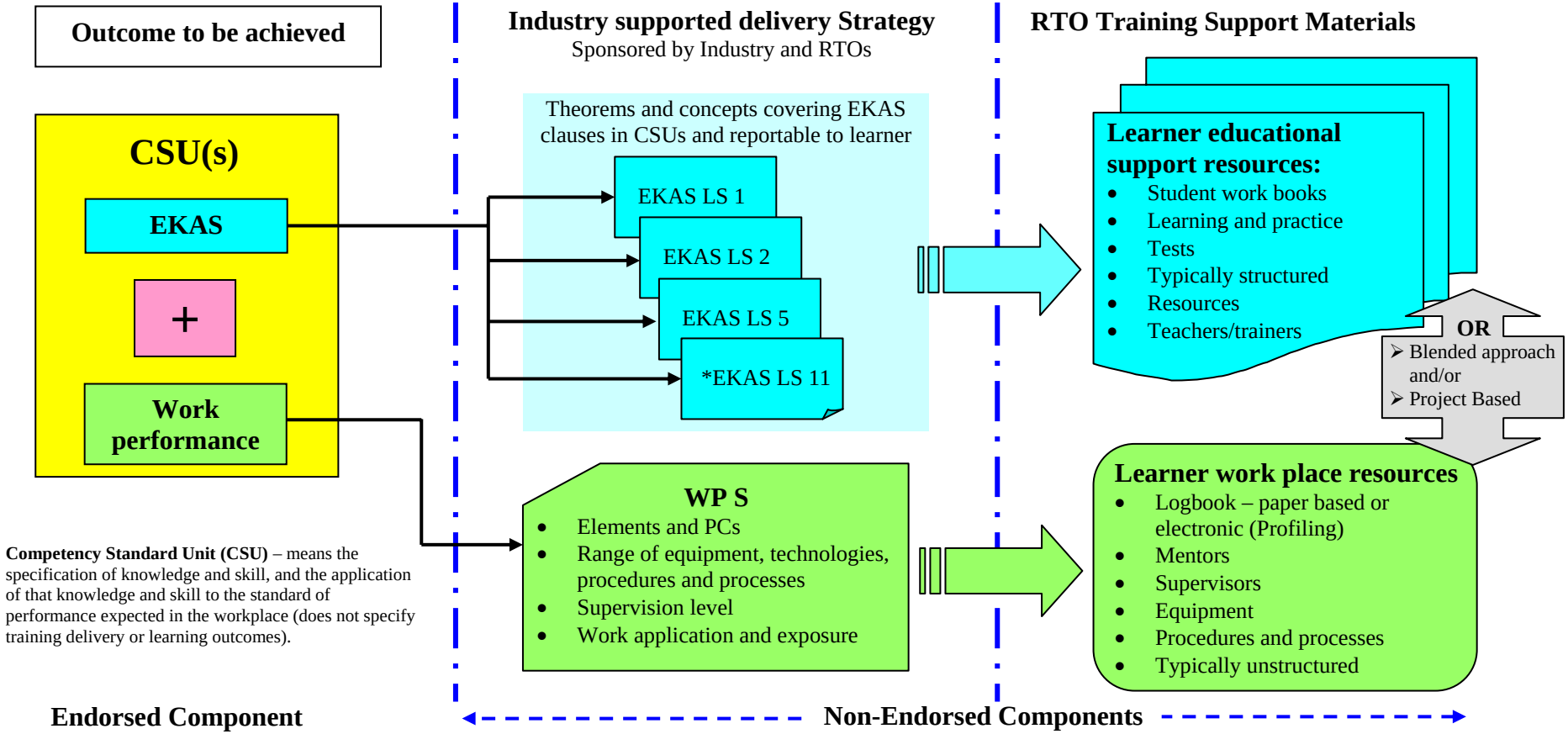
RTO competency development training design model for new entrants using one CSU as an example



EKAS LS – Essential Knowledge and Associated Skills Learning Specifications = where EKAS LS 1 — may cover many units, EKAS LS 2 — may cover a number of units, EKAS LS 5 — may cover several units, and/or EKAS LS 11 – may be unique to the unit (refer to Volume 1 Part 2 and Volume 2 Part 2 for more detail)

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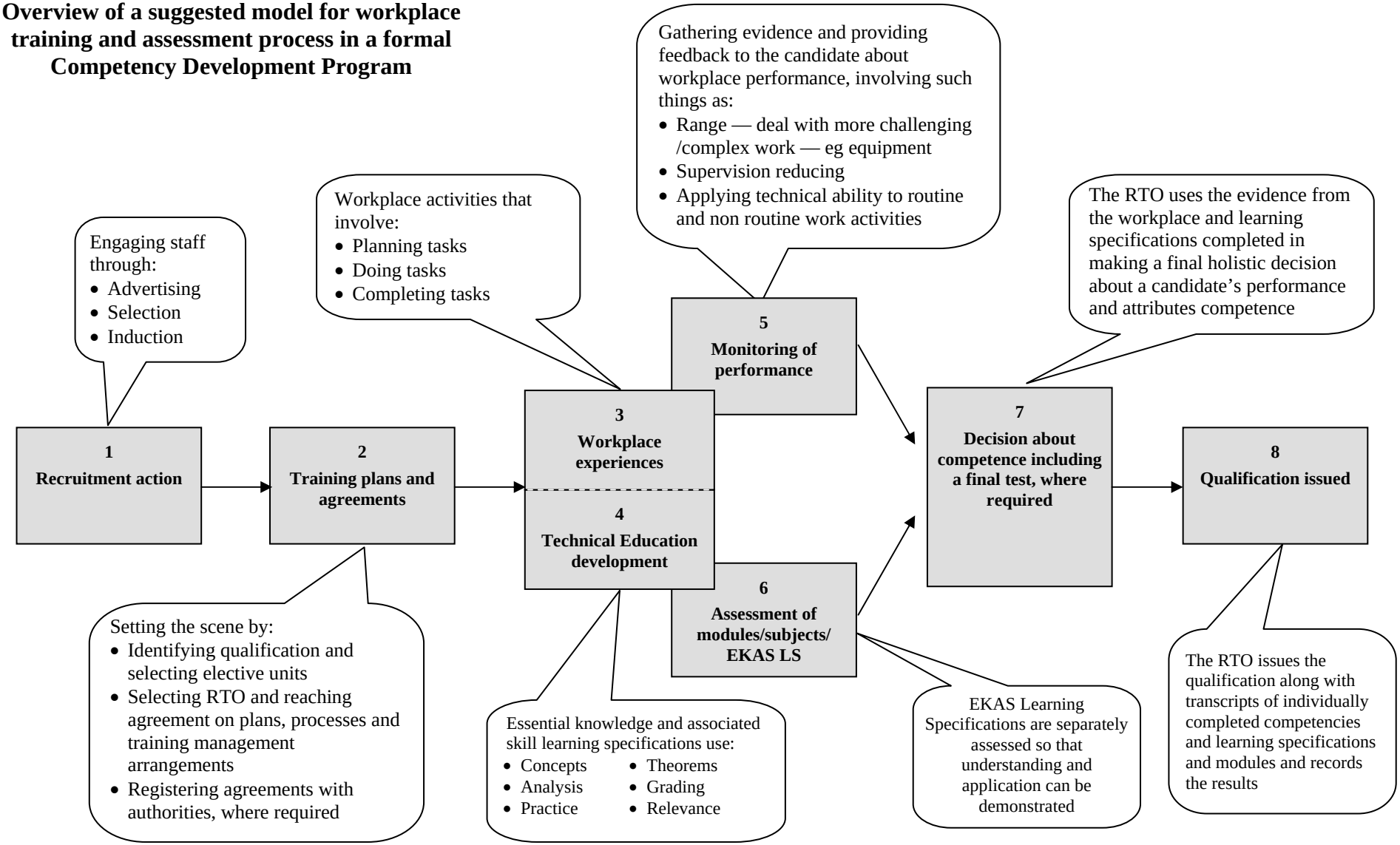
Overview of a suggested model for workplace training and assessment process in a formal Competency Development Program



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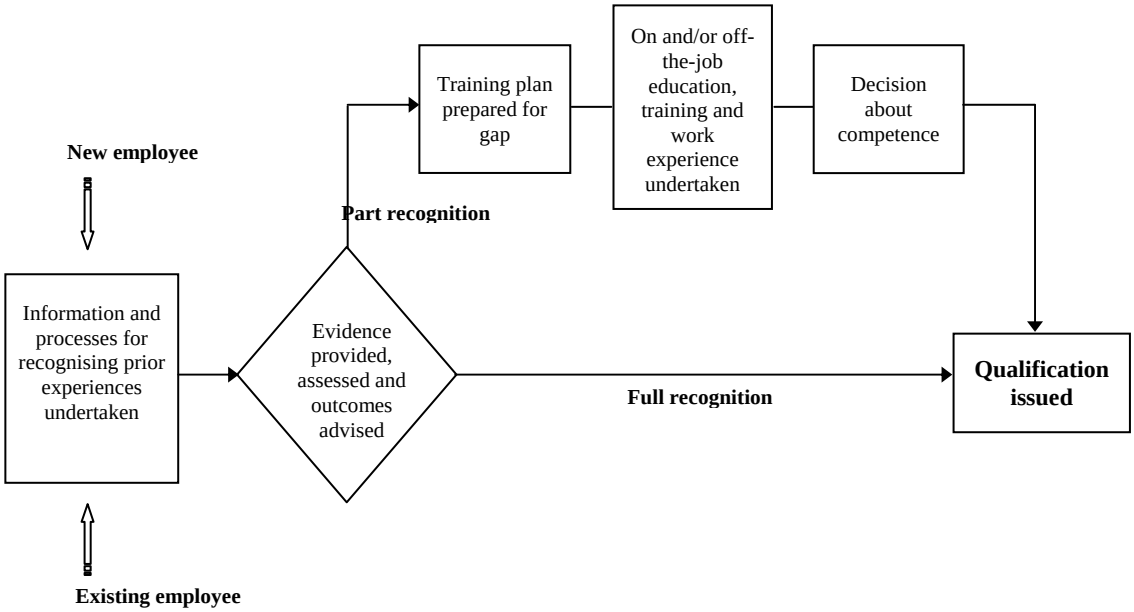
Recognition of Prior Learning/Experience Model

A typical process for candidates seeking to have their prior experiences recognised within the model is shown in the following diagram.



Learning and Assessment strategies

The skills and knowledge required by a competent worker are described in terms of competency standard units. To be assessed as 'competent' against competency standards, individuals need to demonstrate they have the requisite workplace skills and the essential knowledge and associated skills (EKAS) underpinning performance as specified in the competency standard unit.

A candidate must be assessed by a qualified assessor. The assessor must use assessment processes, methods and tools which are in line with this Training Package.

Assessment involves gathering evidence to demonstrate essential knowledge together with requisite skills/work performance. This may include assessment of knowledge and skills obtained through educational courses as well as through application of knowledge and skills in the workplace using workplace processes, equipment and activities.

Assessment Planning

Good planning of workplace assessment is most important. The plan is to be based on a suitable process, ie one that is in line with the Competency Unit — TAAASS401A Plan and organise assessment. Assessors need to address the following components of competence in Training Package TAA04, which cover:

- establishing evidence requirements for a specific context
- establishing suitable assessment methods
- developing assessment tools appropriate to a specific assessment context
- trialling assessment procedure.

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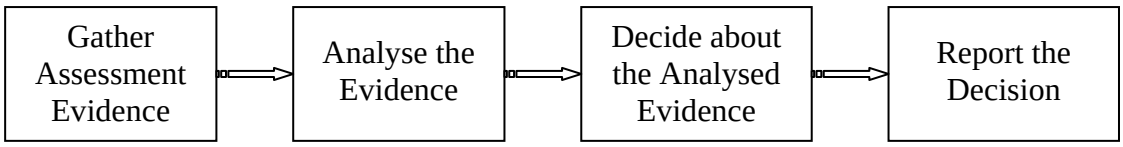
The Assessment Process

The general process for assessing competence is shown in the following diagram.



Assessors need to adapt the process to take account of physical and operational conditions as well as the characteristics and background of the candidate being assessed. Once the process has been finalised, the candidate should be advised.

Assessment Pathways

The Assessment Guidelines of this Training Package identify three assessment pathways for the Industry, as follows:

- Pathway 1: For new entrants to the industry
- Pathway 2: Recognition of prior learning of those with experience in the Industry
- Pathway 3: Recognition of equivalent competency standard units from other Industry Training Packages

NOTE: Pathway 3 can be incorporated within the Pathway 2 processes and activities.

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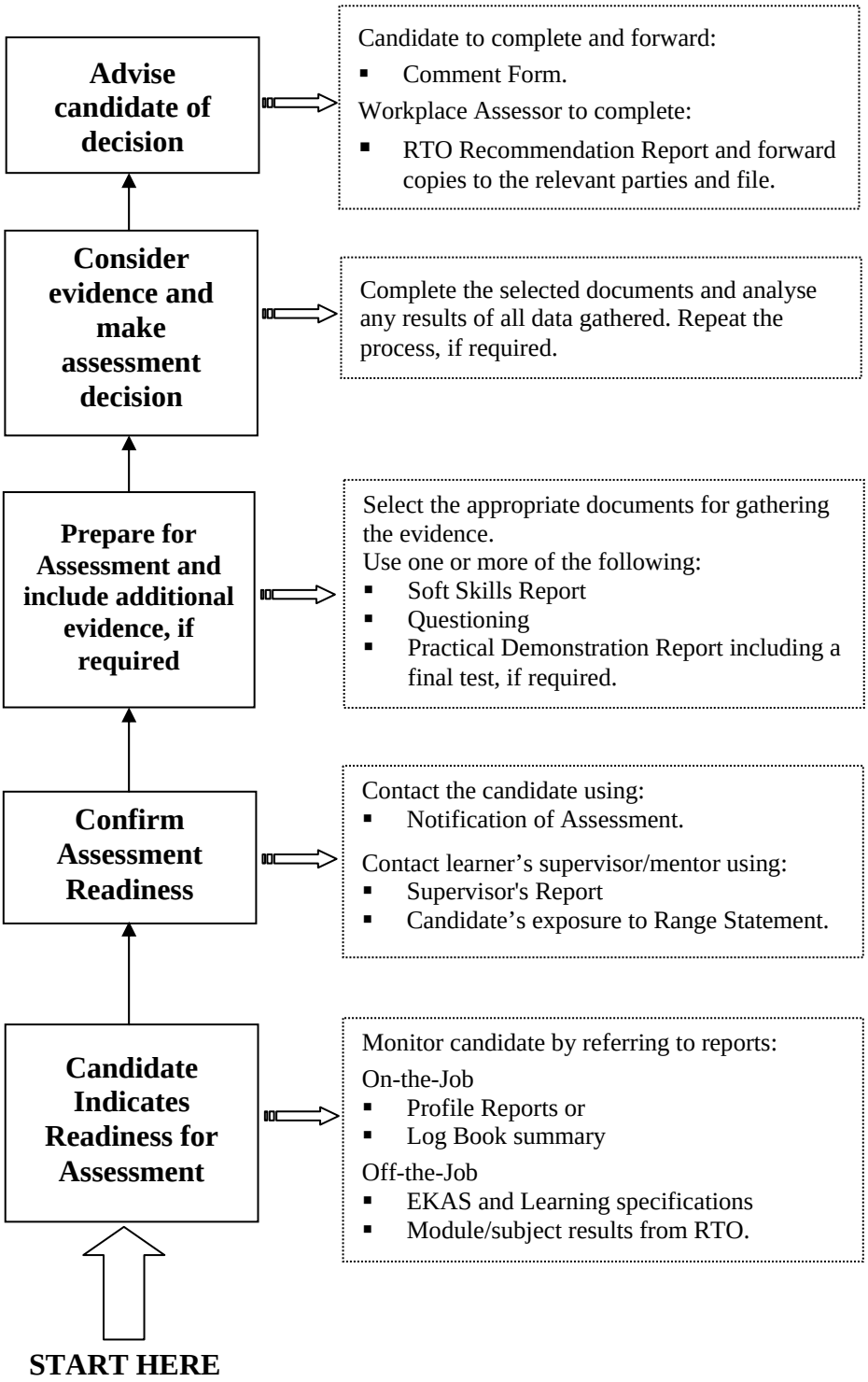
Pathway 1

Competency Assessment Process For New Entrants To The Industry



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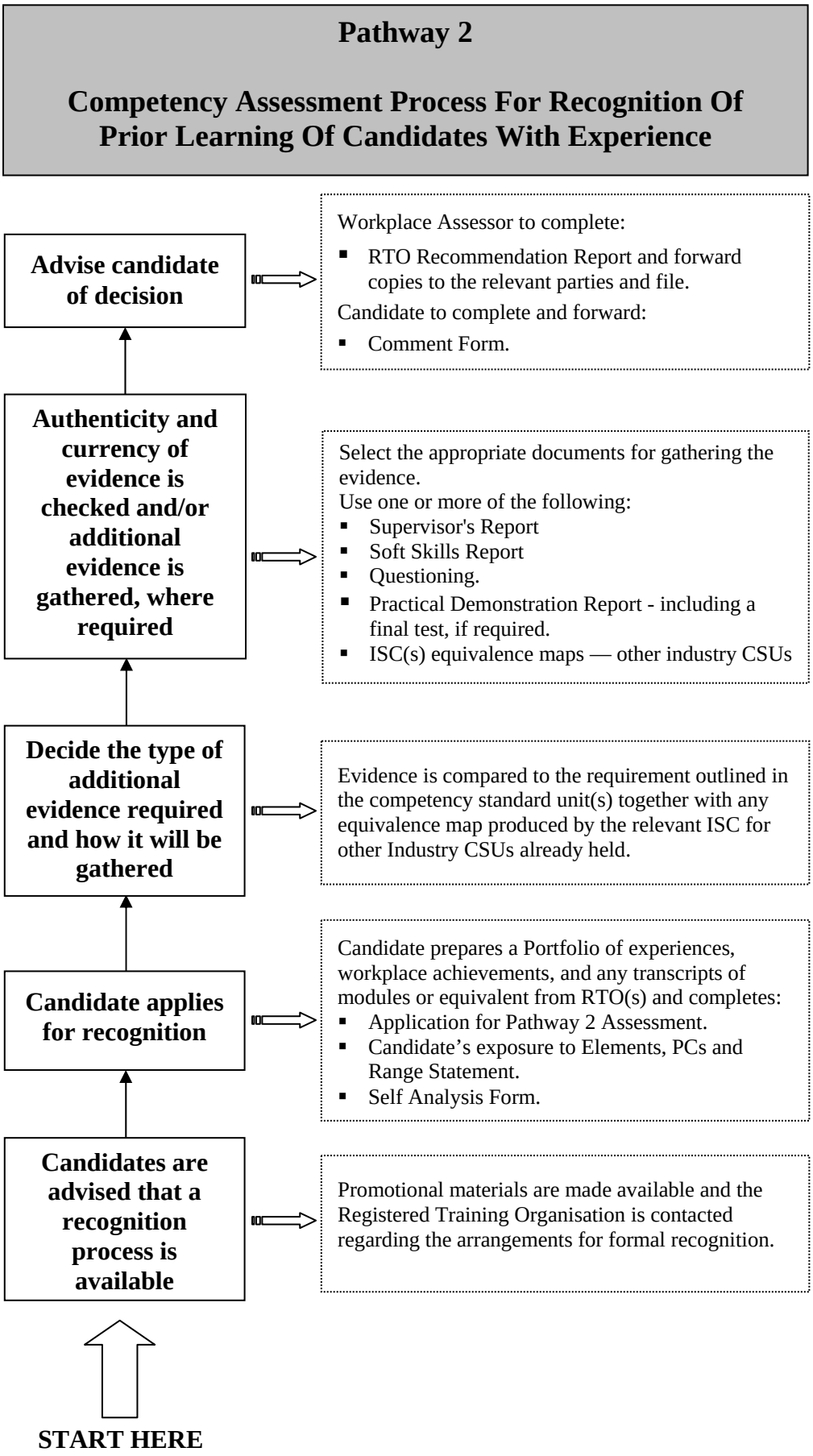

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Establishing the Evidence Requirements

Training Packages provide a clear statement regarding the evidence requirements in the Evidence Guide and in particular the critical aspects of evidence of each competency standard unit. The following is an extract from one competency standard unit.

'Critical aspects of evidence required to demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UEE06". Evidence shall also comprise:

- *A representative body of performance criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:*
  - *Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range; and*
  - *Apply sustainable energy principles and practices as specified in the performance criteria and range; and*
  - *Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result; and*
  - *Demonstrate an appropriate level of skills enabling employment; and*
  - *Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures; and*
- *Demonstrated performance across a representative range of contexts from the prescribed items below:*
  - *Verify compliance and functionality of general electrical installations as described as described in 7) and including:*

    A – Selecting correct tools and testing equipment
    B – Identifying visual non-compliance defects
    C – Using effective methods for conducting mandatory and optional tests
    D – Identifying non-compliance from test results
    E – Identifying causes of non-compliance
    F – Completing mandatory reporting
    G – Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items'

The evidence on which competency is deemed shall be considered holistically.

'**Items'** of evidence that the industry deems critical and that also relate directly to the Performance Criteria and Range Statements include such items as:

- Specific tools, plant and equipment
- Specific testing techniques
- Any advice limiting assessment to actual workplaces, for example because of licensing, regulatory or unique infrastructure requirements
- Specific licensing and regulatory requirements

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- Any advice dealing with unexpected and non-routine contingencies by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment.

Assessment Methods

Assessment involves determining whether a candidate has provided sufficient evidence to demonstrate that they have a specified level of skills and knowledge which they can apply in their work environment.

The evidence provided may include:

- work activity records
- a transcript of training outcomes
- a portfolio of learning experiences
- a self-assessment by the candidate against the relevant competency standard(s).
- supervisor's report(s), addressing requirements of the identified competency standard(s)
- practical demonstration
- details of training undertaken linked to requirements of the identified competency standard(s), such as a profiling or 'many samples' reports
- outcomes of a challenge test.

The assessor may use a variety of assessment methods to gather evidence. Appropriate methods for documenting workplace experiences related to this Training Package are:

- on-the-job work observation
- practical exercises in the workplace or under simulated workplace conditions
- appraisal and report by a supervisor/trainer or colleague
- questioning and discussion with the candidate
- written/practical test
- any Industry Skills Council equivalence mapping declaration for competency standard units held from other Industry Training Packages.

Develop the Assessment Tools

The assessment tools include:

- instruments for gathering evidence – samples included as Enclosure A
- forms for administrating the process – samples included as Enclosure B
- assessment design materials Glossary of Terms – included as Enclosure C.

Trial the Assessment Procedure

It is very important to trial the assessment strategy. There is a need to make sure it is appropriate to the context in which the assessment is conducted. This will involve:

- a focus on the specific requirements of the competency standard unit being assessed
- consideration of the characteristics and background of the person being assessed to make sure the assessor supports the candidate in their understanding of the process and the skills and knowledge that need to be demonstrated
- use of assessment methods and instruments to make sure the evidence gathered:

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- addresses the conditions required to meet the Critical Aspects of Evidence as outlined in this Training Package and related competency standard units
- is drawn from a variety of sources and reflects the required range of work circumstances
- provides reasonable certainty that the evidence submitted is sufficient, current and authentic.

The selection and application of assessment tools is a decision made by assessors. There is no standard answer, however the following is provided as general guidance.

- Assessors need only gather enough evidence so they can make a judgment that competence has been demonstrated. Too much evidence may be difficult to analyse in a consistent manner, whereas insufficient evidence fails to satisfy the assessment criteria.
- Assessors need to adjust or modify the assessment processes and tools as required, within the constraints of achieving a valid, reliable and fair outcome.
- Assessors need to make sure assessment procedures satisfy the principles of assessment (validity; reliability; flexibility; fairness).
- Assessors need to be cognisant and use the industry-preferred assessment approach, as a first option.

Appendix B – Enclosure A: List of Sample Assessment Instruments

Enclosure A1 **Work activity records**

Enclosure A2 **Transcript of training outcomes**

Enclosure A3 **Portfolio**

Enclosure A4 **Self analysis**

Enclosure A5 **Candidates exposure to Range Statement**

Enclosure A6 **Supervisor's report**

Enclosure A7 **Supporting skills report**

Enclosure A8 **Questioning**

Enclosure A9 **Practical demonstration**

Enclosure A10 **Final/challenge test**

Enclosure A11 **Contracted entry level Profiling Model**

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Enclosure A1 – Work Activity Records

Work Activity Records summarise:

- relevant activities – jobs/tasks undertaken at work
- associated resources used such as tools, plant/equipment, procedures, and operating systems
- the period of exposure to each type of task
- the level of supervision provided in the workplace.

This type of record is completed by the candidate in conjunction with the supervisor and signed by supervisor. It is important that workplace experiences are documented by candidates to help them see how their work skills and knowledge are developing relevant competency standard units.

Work Activity Records may be produced in hard copy or in electronic form. A Work Activity Record may relate to a group of competency standards or a competency standard unit.

Most often the activities and experiences recorded should be recurring workplace events/performance that involve exposure to a range of plant, tools, equipment, components and operating systems. Appropriate supervision of representative normal work activities is important to a candidate's development.

Work Activity Records provide valuable data for:

- candidates and their supervisors to track progress in acquiring work-based competencies
- assessors to make decisions about a candidate's level of competence.

From these records assessors can determine if:

- exposure to the desired workplace activities has occurred
- the level of supervision is in keeping with the degree of autonomy required by the competency standard unit
- the learner is able to perform 'whole of job' activities.

The ElectroComms and EnergyUtilities Industry Skills Council trading as EE-Oz Training Standards has a model hardcopy document that candidates can use to record their workplace activities and experiences. The document is called a User Guide. It is formatted in a way that links workplace activities to competency standard units.

More information, including User Guides and techniques for recording workplace experiences electronically, are available from the EE-Oz Training Standards at website: www.ee-oz.com.au.

Enclosure A2 – Transcript of Training Outcomes

Essential knowledge and skills, including that gained from off-the-job training, enables learners to:

- deal with both routine and non-routine technical activities
- readily adapt their skills when new technologies are introduced
- transfer skills to new work environments.

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The RTO issuing the credential can generally provide current information about an individual's progress in the essential knowledge and associated skills or mapped modules/topics/subjects.

Learners who have undertaken a recognised structured training program with an RTO should submit a formal transcript – "Statement of Results" (training outcomes) from the issuing RTO as evidence, for inclusion in the process of competency assessment.

Candidates seeking recognition of prior learning need to provide evidence of knowledge and skills equivalent to the content of the essential knowledge and associated skills specifications detailed in the competency standard units in which they are being assessed, as well as their workplace experiences. Applicants for recognition of prior learning may also seek advice from the RTO about the equivalence status of available evidence of their acquired knowledge and skills.

The ElectroComms and EnergyUtilities Industry Skills Council trading as EE-Oz Training Standards at www.ee-oz.com.au can provide advice in regard to the availability of the essential knowledge and associated skills learning specifications which have been aligned to respective competency standard units and essential knowledge and associated skills clauses.

Enclosure A3 – Portfolio

A portfolio is a collection of documents that demonstrate an individual's professional experiences and achievements in relation to identified competency standards. Typically, portfolios include information from academic achievements, employment record, work activities, supervisor reports and references.

The candidate should prepare his/her own portfolio as an accurate reflection of work and academic history and achievements.

Assessors advise candidates about the amount, type and format of evidence they should submit for assessment against identified competency standard units.

The use of a Portfolio as an assessment instrument can be enhanced by the use of the Self-analysis form included as Enclosure A4.

Enclosure A4 – Self Analysis

Self-analysis involves candidates in assessing their own level of skills and knowledge acquired through work experience and relevant training programs.

Candidates should complete a Self-Analysis Form in relation to each competency standard being assessed, identifying the evidence they can provide to demonstrate each required component of their skills and knowledge.

Assessors can check the references to determine if the evidence provided links directly or indirectly to the requirements outlined in competency standard units and use this data as part of the overall assessment process.

Typically, the self-analysis form would be used for a Pathway 2 Assessment, however, it could have application in a Pathway 1 Assessment in certain circumstances.

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Self-Analysis Application Form

This form allows candidates to summarise their vocational experiences in relation to a particular competency standard units or a group of units. The information provided is used to identify the list of competencies sought for assessment. Candidates need to support their responses to questions, claims and/or comments with authentic evidence. To do this, it is recommended that they develop a portfolio of evidence to be submitted with the Self-Analysis Application Form. The information provided in the Self-Analysis Application Form should be cross referenced with the information provided in the Portfolio.

Candidates must be provided with clear instructions about the information required before they complete each form. They also need to view and understand the detailed requirements of the competency standard unit(s) against which they are seeking assessment. A workplace assessor should assist them with the instructions and details.

Candidates may need to submit a separate Self-Analysis Form for each competency standard unit(s) for which they are seeking recognition.

A sample Self-Analysis Application Form is provided below.

Sample — Self-Analysis Application Form

Enter the codes and title of the National Qualification and title and codes the Competency Standard Unit(s) from qualification for which you are seeking recognition.

Title of National Qualification	Title and code of Competency Standard Unit(s) (For which recognition is being sought)
	1.
	2.
	3.
	4.
	5.
	6.
	7.

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Enter the codes and titles of Certificates, Qualifications, Transcripts of Academic achievement, or Licences that you believe to be supporting evidence.

(Remember to include these documents in your portfolio. You must be able to demonstrate how each document relates to the respective competency standards.)

Code and name of Certificate, Qualification, Transcript of academic record or Licence	Year Achieved

Note: For all Certificates, Qualification and associated transcripts of academic records identified above, a certified copy must be provided.

- Approximately how many jobs have you been involved in that relates to each of the respective Competency Standard Unit(s)?

Competency Standard Unit 1 _____ Jobs

Competency Standard Unit 2 _____ Jobs

Competency Standard Unit 3 _____ Jobs

Competency Standard Unit 4 _____ Jobs

Competency Standard Unit 5 _____ Jobs

Competency Standard Unit 6 _____ Jobs

Competency Standard Unit 7 _____ Jobs

- Give details about the **largest** job you have been involved with. Briefly describe the job and where it was carried out. (Portfolio Ref _____)

_____

_____

_____

_____

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- Estimate the total amount of time (for all similar job mentioned above of all size) you have been involved with - tick box. (Portfolio Ref _____)

	Less than 1 week	1 to 4 weeks	4 to 10 weeks	10 weeks to ½ year	More than ½ year
1					
2					
3					
4					
5					
6					
7					

- Describe the level of involvement you have had in this type of work - tick box. (Portfolio Ref _____)

	Carrying out jobs organised by others	Carrying out jobs organised by others and completing all tests and/or writing of reports	Planning the job from the beginning, carrying out the work and completing all tests and writing of reports
1			
2			
3			
4			
5			
6			
7			

- To what extent were you involved in this type of work? - tick box. (Portfolio Ref _____)

	Carrying out routine tasks	Carrying out and manage several routine tasks at one time	Deal with non routine tasks including diagnosing and rectifying faults	Organising others you work with and dealing with clients
1				
2				
3				
4				
5				
6				
7				

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- How much training did you require to perform the work? - tick box. (Portfolio Ref _____)

	Self taught skills	Basic technical knowledge and skills	Analytical technical knowledge and skills	People and customer skills
1				
2				
3				
4				
5				
6				
7				

- To what degree were you supervised when performing the work? - tick box.

	Constant supervision	General supervision	Self supervision
1			
2			
3			
4			
5			
6			
7			

- Describe any special features or circumstances about the type of work you have been involved with. (Portfolio Ref _____)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

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- List as many different types of equipment items you used when you carried out the work associated with the Competency Standard Units. Make the list under headings such as plant, tools, components, systems and the like. A workplace assessor can assist you with the headings. A separate form may be provided for supplying this information. (Portfolio Ref _____)

Unit code	Unit title	Items	

- For the Competency Standard Units, have you completed a whole job using the equipment items listed above? Also indicate the number of times you have done so.

CSU - 1	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 2	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 3	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 4	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

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CSU - 5	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 6	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 7	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

Declaration by Candidate

All the information provided is entirely factual:

Name: ……

Signed ……..…. Date: …….

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Enclosure A5 – Candidate Exposure to Range Statement

Usually completed by the candidate, this assessment instrument augments other information needed for judging competence. It should provide a list of components from the Range Statement that the candidate has been exposed to in the workplace, eg tools, systems, plant, test equipment and associated items. Since the Range Statement is a component part of the whole unit, assessors should ensure that the gathering of evidence by the candidate is seen as a formative part of the assessment process. Once the evidence is presented, a holistic approach to judging and attributing competence is exercised in conjunction with other related data.

Competency standard unit – _____ ***(Assessor to complete this section)*		**Candidate to Complete** **Identify the items you have worked on**
***Range Statement Item Group**	***Range Statement Items Involved**	
A Personal protective equipment	**Goggles**	4
	Gas mask	4
	Boots	
	Gloves	4
B Wiring types	**TPS**	
	MIMS cable	4
	Armoured cable	

A separate form is required for each competency standard unit. The assessor should complete the following parts of this form in conjunction with the candidate to make sure they are clear about what is required:

- Competency Standard Unit Title and Unit Number
- Candidate's Name
- Date
- Range Statement – Item Group: Please consult the Range Statement as described in section *Establishing the evidence requirements* of this document. Each group alpha character is to represent an appropriate 'group' of variables, such as 'components', 'tools', 'system', 'plant, 'processes', 'equipment', as required by the particular competency standard.
- Range Statement Items Involved: Please list the particular items that have been predetermined as being 'Critical' from the critical aspects of evidence section when the evidence requirements were established (see *Establishing the evidence requirements*).

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Candidates place a tick in the column against those items they have been exposed to in a work environment. Candidates should add to the list of items involved, where appropriate. An example is provided below.

Candidate's work experience with items in the Range Statement listed in this Competency Standard Unit

Competency standard unit title:		**Unit no:**
Candidate's name:		**Date:**
Range Statement Item Group	**Range Statement Items Involved**	**Candidate to Complete** Identify the items you have worked on
A		
B		
C		
D		

Declaration by Candidate

All the information provided is entirely factual:

Name: ……

Signed ……..…. Date: …….

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Enclosure A6 – Supervisor's Report

Comments made by the candidate's supervisor/mentor are an important source of evidence for assessors. Typically, the 'supervisor' (mentor) approached to provide a report for competency assessment will have to spend considerable time guiding or monitoring the candidate in his/her development by providing supervised workplace learning experiences, appropriate to the candidate's ability.

Supervisors should be asked to comment on the candidate's ability to:

- demonstrate specific skills as described in the respective aspects of the competency standard units under assessment
- apply required essential underpinning knowledge and associated skills, eg. as learnt in their technical studies, to the work undertaken
- work independently or in a team in a way that is productive and safe.

The Supervisor's Report can be completed as part of the pre-assessment planning process or during any other part of the process. More than one supervisor can provide information.

Assessors should make sure supervisors are clear about the specific detailed requirements of the Electrotechnology Industry Competency Standards targeted for assessment.

A sample report form is provided below.

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Supervisor's Report on _____(Learner's Name)	
Name of Supervisor/Assessor: _____	**Date: ___/___/_____**
Position in organisation: _____Contact number:_____	
Approximate time (cumulative) providing guidance to the candidate _____days / hrs in Unit(s): _____ _____	
Responses made by supervisors/mentors are for the purpose of providing information to a workplace assessor. The supervisor is <u>not</u> making a decision about competence. The assessor will include the information with other data in the decision making process.	

Question asked of the supervisor/mentor	**Responses**		
Taking into consideration the candidate technical development and work experiences, can they:	**Yes**	**Requires further training**	**No**
Carry out duties with confidence			
Work in a safe manner with care for self and others			
Perform tasks with the minimal amount of waste or rework			
Complete tasks within a reasonable time			
Identify ways of improving how jobs are done			
Initiate action to improve processes or practices			
Work with others to achieve the work outputs of the group			
Work independently to achieve work outputs			
Resolve non-routine work functions			
Other comments:			
Supervisor's/Assessor's Signature: Date: / /			

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Enclosure A7 – 'Supporting Skills' Report

'Supporting Skills' refer to non-technical skills which are embedded in all the competency standard units. Demonstration of these is an essential part of competency assessment. Non-technical skills include:

- the ability to work independently or in teams while dealing with customers
- knowledge of and ability to follow enterprise policies
- communication skills used in following and issuing instructions
- knowledge of and ability to address quality assurance requirements
- personal management and development skills
- knowledge of and ability to address environmental protection and sustainable energy policies issues.

A Supporting Skills Report may be completed by an assessor, the candidate's supervisor or another third party. Below is an outline of aspects covered by Supporting Skills.

Supporting Skills – What do they cover?

1. Enterprise Instructions

Technical manuals

Using enterprise or manufacturers' technical manuals to ensure equipment and parts are installed to manufacturer specifications.

Quality systems

Plan, apply and contribute to quality systems.

Computers systems

Use enterprise documentation and record systems, including where appropriate the use of data-capture equipment such as computers, information systems and technologies.

Environmental and sustainable energy requirements

The safe disposal of used oil, grease and chemicals, the reduction of electrical energy by turning off lights and heating devices and minimising the impact that engineering practices have on the environment.

Occupational Health and Safety (OHS) requirements

Follow OHS and standard operating procedures in a manner that is safe to the individual and others.

Equal opportunity / Ethical practice / Cultural diversity

Become familiar with enterprise, equal employment opportunity polices, ethical practices and principles and cultural diversity.

Enterprise vehicles

Vehicle log book details are completed accurately, ensure the vehicle is kept clean and secured, and fuel and liquid levels are maintained.

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2. Customer relations

Public

Provide courteous and informative advice during construction, maintenance or service activities.

Workers providing other services

Cooperate with workers providing other construction, maintenance or service activities.

Clients and land owners

Recognise the responsibilities and rights of clients and land owners.

Authorities

Recognise the responsibilities and rights of statutory and other authorities.

3. Self development

Systematic problem solving

Solve problems using technical literature, exploring theories, performing calculations and by making enquiries.

Personal well being

Maintain and promote personal well being in the workplace through fitness and by avoiding excessive use of alcohol, tobacco and other harmful substances.

Time management

Be punctual, complete work activities on time/to deadline and sequence activities to maximise the use of available time.

Professional development

Seek to improve technical ability by discussions with others or by technical research and on-going competency development.

4. Team work

Communication

Communicate plans, information, intentions and safety criteria to others using appropriate means.

Team involvement

Contribute positively to the work-team environment.

Competency Enhancement

Participate in the training of others by sharing ideas, explanation of operating systems and detailing the working arrangements of components and equipment.

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Instructions for Completing the Supporting Skills Report

When completing a Supporting Skills Report, the workplace assessor (or nominee) should refer to documentation, ask the candidate questions and/or seek advice from the candidate's supervisor/mentor.

Complete the form in the following way.

Step 1

Place a cross (X) in the box to indicate areas from where evidence has been sourced.

Supporting Skills Report		
Candidate's name		**Date**
Supervisor's/Assessor's name		/ /
Enterprise instructions 1. Applies correctly without constantly making reference to them. 2. Refers to them regularly and applies information correctly. 3. Awareness of their existence but not referred to or used.	**Rating** **1** **2** **3**	
Technical manuals	X	Identify a minimum of three.
Quality systems	X	
Computer systems	X	
Environmental requirements	X	

Step 2

Review documentation and/or ask questions of the learner or their mentor/ supervisor.

Step 3

For each area, establish the appropriate level (1, 2 or 3) that reflects the capability of the learner. Place a circle around the corresponding number. Evidence should be collected from a number of sources before rating the candidate.

Note: A rating of 2 or 3 indicates further training or experience is required. A rating of 1 indicates the candidate has demonstrated their competence in this area.

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Supporting Skills Report		
Candidate's name		Date
Supervisor's/Assessor's name		/ /
Enterprise instructions 1. Applies correctly without constantly making reference to them. 2. Refers to them regularly and applies information correctly. 3. Awareness of their existence but not referred to or used.	***Rating (circle #)*** **1** **2** **3**	
Technical manuals		Identify a minimum of three.
Quality systems		
Computer systems		
Environmental and sustainable energy requirements		
Occupational health and safety requirements		
Equal opportunity/Ethical practice/Cultural diversity		
Enterprise vehicles		
Customer relations 1. Customers are included in discussion effecting operational issues 2. Knowledge of but limited application of customer relations. 3. Requires more understanding of customer needs.	***Rating*** **1** **2** **3**	
Public		Identify a minimum of two.
Workers providing other services		
Clients and land owners		
Authorities		
Self development 1. Desire to expand beyond the present job role. 2. Keeps abreast of new products and services. 3. Requires more understanding of the job role.	***Rating*** **1** **2** **3**	
Systematic problem solving		Identify a minimum of two.
Personal well being		
Time management		
Professional development		
Team Work 1. Shares ideas, assists and accepts assistance from others 2. Accepts ideas and assistance from others. 3. Prefers not to assist or accept assistance from others	***Rating*** **1** **2** **3**	
Communications		Identify a minimum of two.
Team involvement		
Competency enhancement		

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Enclosure A8 – Questioning

As part of the assessment process it may be necessary to gather additional evidence to clarify specific aspects of competence.

The RTO assessor (or their nominee) may need to ask questions of the candidate, their supervisor or their trainer. A form is provided in this enclosure for documenting their responses. The form provides guidelines for questioning a candidate about the Performance Criteria related to each Element of competence. Below are two tables which provide guidelines for assessing a candidate's response to these questions.

If the assessment is formative, ie part of a training process, the response given by the candidate should be consistent with the 'Appropriate coverage to questions – level 1'.

If the assessment is summative, ie final, the responses should be consistent with the 'Appropriate coverage to questions – level 2'.

Note to assessors:

1. As competency standard units are typically structured around PLAN ⇐ CARRY OUT ⇐ COMPLETE jobs in the workplace, the form for recording responses is generic.
2. Please make reasonable adjustments to the form as required to accommodate particular aspects of individual Competency Standard Units.

Level 1 Appropriate Coverage of Responses to Questions

Element 1 – Planning for job/task functions (L1)
Issues about involvement of personnel, enterprises operational requirements and the requirements of regulators would not normally be expected. Coverage should involve such things as: **OHS** ➢ Clarifying instructions given if any doubt exists as to what is required. ➢ Checking with others involved if any personal protective equipment is needed. ➢ Identifying hazards and risks associated with the wok, including any first aid and other similar requirements **Tools, equipment etc** ➢ Identifying the tools and equipment that are required. ➢ Explaining where any special equipment is located and how arrangements will be made to have them available, if required. **The work schedule** ➢ Identifying: - the work and relevant processes, procedures and personnel required - the process of work to be undertaken - the work site activities and issues to be attended to - the authorities associated with the work - any isolation procedures/permits that may apply.

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Element 2 – Carrying out job/task functions (L1)
Coverage should involve such things as: **OHS** ➢ Keeping: - the immediate work area clear of debris - tools clean and organised when not in use - clear of moving parts, live electrical conductors, hazards, and obstacles. ➢ Wearing work clothes and personal protective equipment when required. ➢ Performing the technical work required. ➢ Applying the relevant knowledge and skills underpinning performance. **Tasks** ➢ Following instructions given by others. ➢ Observing what is occurring, listening to explanations about why tasks are performed in certain ways and asking questions when required.

Element 3 – Completing job/task functions (L1)
Coverage should involve such things as: ➢ Cleaning tools and equipment. ➢ Returning tools and equipment to their normal storage place.

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Level 2 – Appropriate Coverage of Responses to Questions

Element 1 – Planning for job/task functions (L2)

Coverage should involve, but not limited to, such things as:

OHS

- Clarifying instructions given if any doubt exists as to what is required.
- Arranging for any special personal protective equipment to be available.
- Checking to see if the work site is accessible.

Personnel

- Identifying other personnel involved in the work and coordinating proposed activities.

Regulatory requirements

- Arranging for relevant work instructions and installation specifications to be available, if required.
- Arranging work permits/isolation, etc.

Tools, equipment etc

- Arranging the tools and equipment that are required.
- Coordinating where any special equipment is located and how arrangements will be made to have them available, if required.

The Work Schedule

- Confirming:
  - the plan and process of work to be undertaken
  - the work and relevant processes, procedures and personnel required
  - the work site activities and issues to be attended to
  - the authorities associated with the work
  - isolation or work permits authorities.

Element 2 – Carrying out job/task functions (L2)

Coverage should involve, but not limited to, such things as:

OHS

- Keeping the immediate work area clear of debris.
- Keeping tools clean and organised when not in use.
- Keeping clear of such things as moving parts, live electrical conductors and obstacles.
- Wearing work clothes and personal protective equipment when required.
- Having barriers in place to exclude public access to the work place, as required.
- Ensuring all personnel involved are alerted to work activities and communications are established and maintained.
- Keeping alert to the working environment while watching for unexpected occurrences.
- Confirming appropriate competence of first aid and persons, including other requirements such as confined space and the like, where appropriate.

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- Performing tasks independently with reference to enterprise instructions.
- Accept and act on initial advice and feedback provided by others.
- Observing what is occurring, listening to explanations about why tasks are performed in certain ways and asking questions when required.
- Applying essential knowledge and associated skills and providing solutions to "what if" scenarios.

Technical assistance

- Further reference to enterprise instructions.
- Reference to the requirements of regulations, work instructions or other relevant standard.
- Recall of theory or application.
- Involvement of others with greater experience.

Element 3 – Completing job/task functions (L2)

Coverage should involve, but not limited to, such things as:

Performance checks

- Checking that all guards and covers removed during the activities are replaced & adjusted.
- Checking that all temporary arrangements required during the process work have been removed.
- Carrying out any tests required by regulation or work instructions.
- Operating the installed/repaired parts or system to ensure it functions as specified.

Notification

- Informing all immediate personnel involved that the work is completed.
- Informing clients and others that the work is completed.
- Removing all signs and barriers, as necessary.
- Reporting any damaged tools and equipment and arrange replacement.

Paperwork

- Completing store/inventory paperwork.
- Completing the work log or management reports by recording what occurred and providing recommendations/solutions to be followed up in point form.

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Instruction for Recording Responses to Questions

Step 1

Identify the elements of competence on which questions will be asked.

Step 2

Identify if the response expected is typical of the candidate undergoing a formative assessment (level 1) or summative assessment (level 2). This may be different for each element involved.

Step 3

Ask the main question and indicate (Y or N) whether the candidate's response addresses the coverage required.

Step 4

Ask follow up questions to probe any areas not recorded as Y in Step 3. Record Y or N to the response given in the space provided.

From all the evidence presented a holistic judgement is then made.

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Questions

Unit Title: **No.** _____						
Candidate's name: _____ **Assessors name:** _____						
Main Question for the '*Planning Work*' Element **What are the main things you would** *consider when you are planning and preparing for work?*	**Expected Response Level**				**Not used**	
	(circle)	**1**	**2**		**(tick)**	
Issues to be cover in response to the main question – and – Follow up questions, if required					**Coverage (Y or N)**	
What occupational health and safety issues do you consider?						
Who are the personnel you would involve?						
What enterprise requirements need to be taken into account?						
What regulatory requirements need to be taken into account?						
What tools, equipment and other items need to be arranged to do this job, where will you get them from and how will you arrange to have them made available when you need them?						
What work schedule will be followed?						
Main Question for the '*Carry-Out Work*' Element **What are the main things you will do** *to ensure the work you carry out is done productively?*	**Expected Response Level**				**Not used**	
	(circle)	**1**	**2**		**(tick)**	
Issues to be cover in response to the main question – and - Follow up questions, if required					**Coverage (Y or N)**	
What are the main OHS practices and precautions that are specific to this work function?						
What are the main engineering tasks involved in carrying out this job?						
What would you do if the work you were undertaking became technically difficult and you could not complete it to requirements?						
What essential knowledge and associated skills would support a response to providing solutions to "what if" scenarios?						

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Unit Title: (Cont.) **No.** _____						
Main Question for the '*Completing Work*' Element	**Expected Response Level**				**Not used**	
What are the main things you will do **What are the main things you will do** *What needs to be done to finalise the job?*	**(circle)**	**1**	**2**		**(tick)**	
Issues to be cover in response to the main question – and – Follow up questions, if required					**Coverage (Y or N)**	
What checks need to be made to insure the work you undertook meets specified performance requirements?						
Who do you notify that the work has been completed?						
What paperwork needs to be completed and what will you write about?						

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Enclosure A9 – Practical Demonstration

An assessor may need to observe a candidate demonstrating practical tasks. The Engineering Practical Skills Form is designed to help assessors record work-based observations. In the Sample Form below, notes taken are analysed and a rating is given for the candidate's engineering skills.

Note to assessors:

- The form for recording responses is generic to all competency standard units.
- Make reasonable adjustments to the form as required to accommodate particular aspects of individual competency standard units.
- You may only need to observe candidates on particular (not all) elements of competence.
- If the assessment is formative (for feedback purposes), then the level of supervision that applies during work activities should apply during the assessment activity.

Instructions for Completing the Engineering Practical Skills Form

The form provides a means of recording information about a learner's engineering practice. A workplace assessor (or nominee) does this by observing pre-arranged activities and determining an engineering skills rating.

Step 1
Enter the title of the competency standard unit and the unit number in the space provided.

Step 2
Enter the learner's name in the space provided.

Step 3
Enter the name of the person who is completing the form. This may be the assessor or someone who the assessor nominates to gather the information.

Step 4
Enter the date on which the evidence is gathered.

Step 5
Determine the elements of competence being observed (circle yes or no).

Step 6
Determine the level of supervision that is to apply to the Elements being observed. Use the Supervision Level code from the bottom left of the form (A, B or C) and enter in the second column.

Step 7
Observe the learner perform tasks related to the element(s) being assessed, checking that they address the required Performance Criteria. Record in the first column of the table under the heading 'Notes from Observation' key points to indicate whether the learner:

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Has acted in a way that meets specifications required by manufacturers, regulations or client specifications.

1. Has followed established enterprise procedures.
2. Met the requirements of the Competency Standard being assessed.
3. Needed to be shown or told how to perform tasks beyond what is reasonably expected given his/her level of experience and therefore requires further training.

Step 8

Using the Engineering Skills Rating codes at the bottom right of the table, enter the appropriate letter in the space provided to indicate the level of competence demonstrated in relation to the Competency Standard being assessed.

From all the evidence presented a holistic judgement is then made.

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Engineering Practical Skills Form

Competency Standard Unit title: _____ Date: _____/_____/_____

Candidate's name: _____ *Assessor's Name:* _____

Notes from observation	Supervision Enter A, B or C	Engineering Practice Enter D, E, F, G
Plan activities: Yes or No (circle to indicate if evidence is being gathered)		
Carry out activities: Yes or No (circle to indicate if evidence is being gathered)		
Complete activities: Yes or No (circle to indicate if evidence is being gathered)		

Supervision - Level		Engineering Skills - Rating	
A	The learner is working under direct supervision.	D	Met required specifications.
B	The learner is working under limited supervision	E	Followed established enterprise procedures.
C	The learner is working under general supervision with a high degree of autonomy	F	Met competency standard requirements
Learner's Signature ……..….. Assessor's Signature …….		G	Further training required

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Enclosure A10 – Final/Challenge Test

A test may be required if the assessment process does not provide:

- sufficient, authentic or current evidence
- particular aspects of evidence related to equipment operation
- particular aspects related to safety
- all the requirements related to the influence of external bodies such as regulatory authorities

A final test should:

- cover the conditions associated with the 'Critical Aspects of Evidence' statement in competency standard units
- take into account the principles of assessment and be sufficiently rigorous
- be consistent with the policies and practices of the RTO providing the recognition.

Enclosure A11 – Contracted Entry Level Profiling Model – Sample assessment instruments that support a profiling model

In relation to the industry-preferred assessment model for contract entry-level competency development programs (New Apprenticeships), longitudinal approaches to assessment activities are considered more efficient and effective. This is best achieved by implementing a process of frequently gathering reliable data from the workplace by the learner and having it verified in a form that can be easily used and consistently interpreted.

One option is to use a machine-readable data scan card or direct web entry process, operating in conjunction with a sophisticated computer software program to achieve this result. The design of the system known as Profiling reflects the key requirements outlined in the relevant competency standard units making up the competency development plan/program. Learners report directly on their exposure to required work experiences in a structured way. Additional to the off-the-job technical training required for contracted entry level learners, Profiling gathers specific workplace information reliably and systematically.

Data gathered frequently from the workplace accumulates over the competency development period and is reported graphically at given periods. This approach encourages self review and participation in the system, eliminates bias and minimises the effects of low levels of literacy (see below for an example).

The information gathered under Profiling, forms one component of a two part, in some cases three part, Training Program that supports competency development in a way preferred by the industry. The components are:

1. off-the-job training (technical subjects/topics)
2. on-the-job training (workplace activities)
3. a specific final 'safety systems (capstone)' test, where applicable.

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Typically, the off-the-job component requires the successful completion of technical subjects/topics of training against essential knowledge and associated skills (EKAS) clauses included in the respective competency standard units. Usually the EKAS are aligned to EKAS Learning Specifications that expand on the essential knowledge and associated skills clauses, providing more detailed information on depth and breadth of learning required for RTOs. The on-the-job component requires a profile to develop from workplace experiences/exposures. Finally, a specific safety assessment test is conducted, where applicable, for regulatory and industry requirements.

On-the-job workplace data (experiences/exposures) is gathered and reported on against the respective aspects of industry-determined competency standards, using pre-defined industry norms. Typically the information gathered pertains to the:

- activity measured against each element of competency and indirect information measured against the performance criteria
- quality, breadth and range of equipment, processes, techniques and applications experienced and worked with/on in the workplace
- level of supervision of a learner's workplace experiences
- hours of exposure (recording hours only is not generally considered Profiling)

Entry against the prescribed criteria is completed regularly (eg weekly) by the learner, the software program calculates the data against industry predefined norms and regular reports are produced (typically quarterly) for the use and information of RTOs, employers and the leaner. Assessors use this information in a holistic way to identify and analyse trends and anomalies against the predefined industry norms.

The advantage of Profiling over many other mediums such as manually based log-books which require extensive and laborious analysis is that it is simple and directly reflective of the workplace experiences undertaken at the time. It provides evidence for:

- managing workplace skill development/ performance of competency required to produce quality work
- progressive assessment and supporting the attainment of a national qualification
- the attainment of an electrical workers' licence/regulated registrations, where appropriate
- the need for job rotation
- allocating work
- RTOs — in this way reducing the demand for an array of workplace assessors.

To gain an appreciation of what a data card and a report may look like a sample of each is included over the page.

Sample Data Card and Quarterly Report – provided below

Note: details of fields determined by Industry to accommodate enterprise requirements

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Sample Data Card

Certificate III Electrotechnology Systems Electrician

Week Number

Profiling Registration No. | Apprentice Surname | Apprentice Signature

SAMPLE ONLY

This week I :	Install support / protection	Install/terminate LV cables	Install Network comms cables	Test Apparatus / circuits	Install apparatus	Commission apparatus / circuits	Diagnose / rectify faults app/circuits	Maintain apparatus / circuits	Install explosion protected equip	Maintain hazardous area equip	Monitor energy usage	Install / maintain fluid m'ment equip	Electrical supporting activities	Off-job training attended (eg college)	Sick	Leave / RDO etc.	PASSED one module	PASSED half module
worked in the these areas	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
for approximately – up to 2 hrs	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
4 hours	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
8 hours	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
16 hours	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
32 hours	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
and I – planned (ie interpreted diag etc.)	○	○	○	○	○	○	○	○	○	○	○	○						
carried out (ie conducted work)	○	○	○	○	○	○	○	○	○	○	○	○						
completed (ie compliance etc.)	○	○	○	○	○	○	○	○	○	○	○	○						
whilst under – direct/constant supervision	○	○	○	○	○	○	○	○	○	○	○	○						
general/intermittant supervision	○	○	○	○	○	○	○	○	○	○	○	○						
broad supervision	○	○	○	○	○	○	○	○	○	○	○	○						

Choose multiple combinations of hours

Choose one or more

Choose one or more

Hours

Cable/wiring support protection

- ○ aerial
- ○ cable tray/ladder
- ○ catenary support
- ○ metallic conduit
- ○ non-metallic conduit
- ○ trunking
- ○ underground systems
- ○ unenclosed support (eg. clips, saddles, ties)
- ○ other

Power and control - LV cables

- armoured cables ○
- fire performance cables (eg. MIMS) ○
- signal cable (eg. shielded inst cable) ○
- special cables (eg. trailing cables) ○
- thermplastic insulated cable ○
- thermoplastic sheathed flat cable ○
- thermplastic sheathed circular cable ○
- other ○

Network communications cables

- coaxial ○
- optical fibre ○
- structured (cat5/5+) ○
- patchcords ○
- telephone (cat3/4) ○
- other ○

Apparatus

- ○ control devices
- ○ heating
- ○ lighting
- ○ protection devices
- ○ socket outlets
- ○ switchboards
- ○ DC motors & controls
- ○ single phase motors & controls
- ○ synchronous motors & controls
- ○ three phase motors & controls
- ○ other

Mandatory testing

- ○ continuity
- ○ insulation
- ○ polarity
- ○ correct connections (eg. switching as intended)
- ○ isolation

Other testing

- ○ loop impedance
- ○ calibration
- ○ leakage
- ○ load current
- ○ performance characteristics
- ○ other

Supporting work included :

- ○ follow safety procedures
- ○ use information systems
- ○ protect the environment
- ○ document activities

Tradesperson's signature verifies that the work was performed to an acceptable standard within an acceptable timeframe given the experience of the apprentice

Electrical Licence No: | Tradesperson's Surname | Tradesperson's Signature

*NB. **Both** the Tradesperson's signature and Licence Number on the bottom of the card are **mandatory** - your signature means that you are simply checking that the work listed has been done. You are **not** assessing competency. There is no greater responsibility/obligation placed on the Tradesperson signing this card than there is currently under the Apprenticeship Act*

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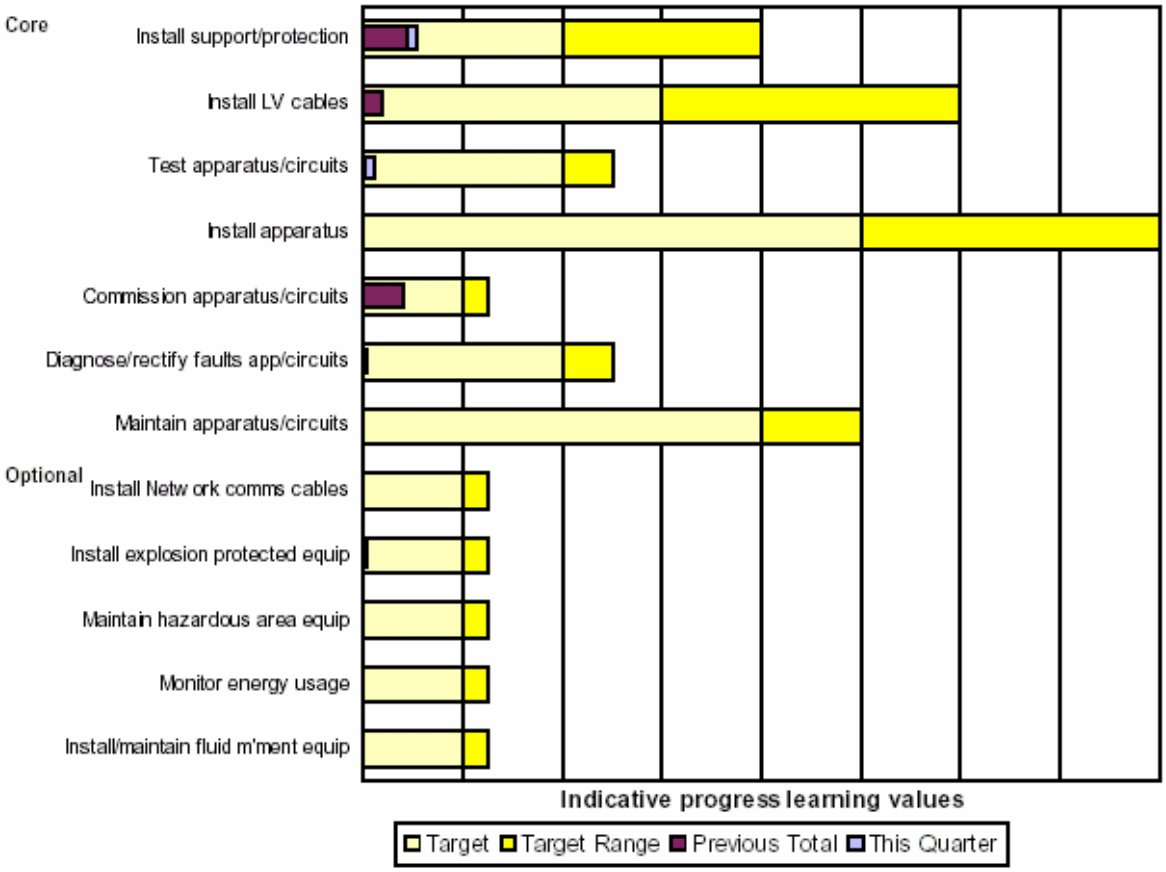
Sample Profiling Report

First Zzsample (999999)

Apprentice On Job Experience Profile - Progressive and Benchmarks Points
Systems Electrician - Quarterly Report, May 2002



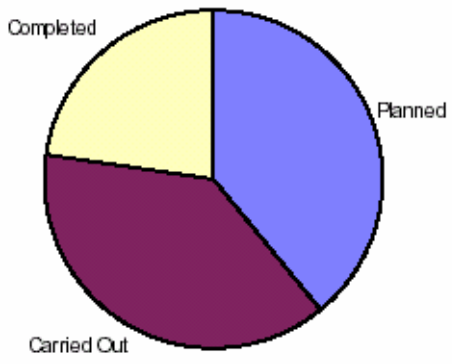
* indicates Optional competency selected by the learner in Schedule C

Apprentice Signature ..... Date .....

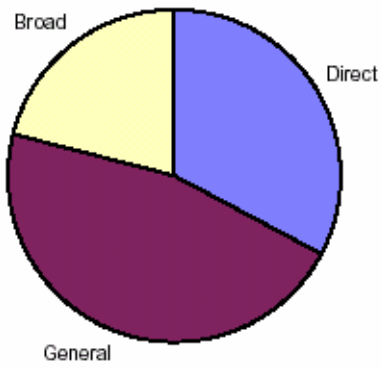
Employer Signature ..... Date .....

Host Signature (if applicable) ..... Date .....

Apprentice role



Supervision level



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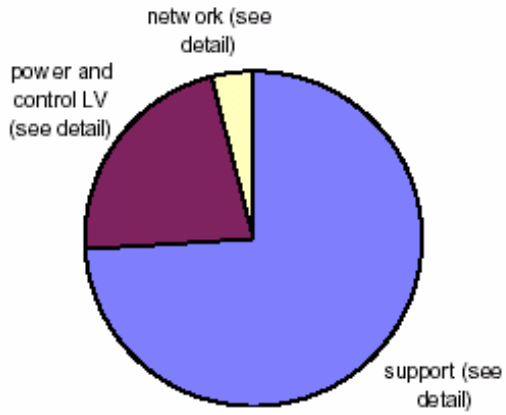
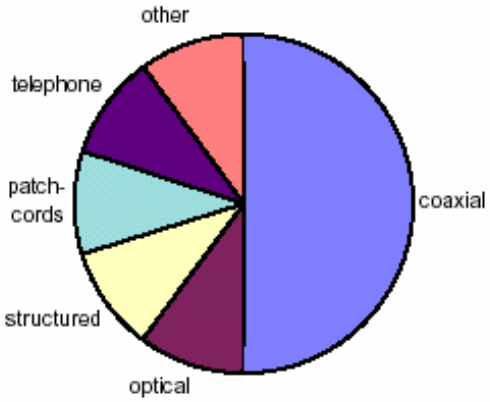
Sample Profiling Report (cont.)

First Zzsample (999999)

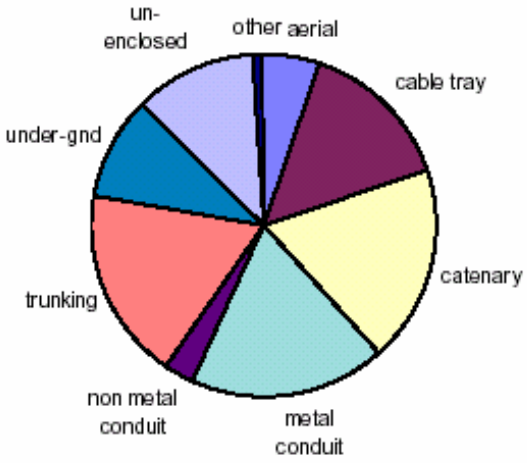
Electrical wiring system type



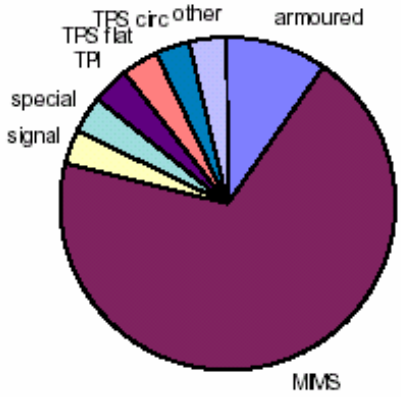
Electrical wiring detail: Network communications



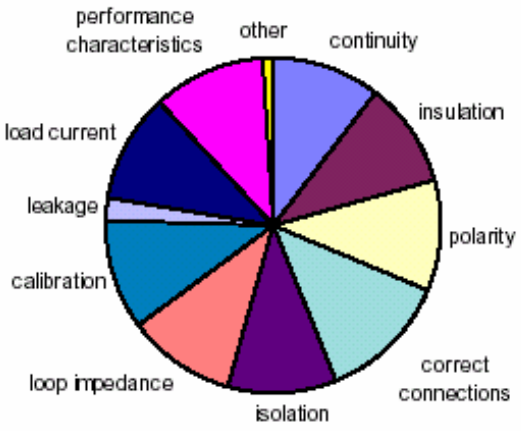
Electrical wiring detail: Support and protection



Electrical wiring detail: Power & control - LV



Testing techniques used



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Appendix B – Enclosure B: Administrative forms

Enclosure B1	**Notification of workplace assessment**
Enclosure B2	**Application for recognition of prior learning/ current competence**
Enclosure B3	**Assessee comment/feedback**
Enclosure B4	**Candidates competency achievement report to a Registered Training Organisation**

Enclosure B1 – Notification of workplace assessment

This form is used to notify a learner about their assessment. The learner is advised of the type of evidence being sought, the Competency Standard Unit(s) of competence being considered, who will be involved and the time and place of the activity.

Enclosure B2 – Application for recognition of prior learning/ current competence

Candidates should use this form to apply for recognition. The applicant needs to provide their personal details, the Competency Standard Unit(s) for which they seek recognition, the type of evidence being provided and the names of referees.

Enclosure B3 – Assessee comment/feedback

This form is used by the learner (or RPL applicant) to make comments about the workplace assessment process and/or decision. It should be distributed prior to an assessment event being conducted. The workplace assessor should be sent a copy of each form completed and should retain completed forms in case of any future review and/or inquiry.

Enclosure B4 – Candidates competency achievement report to an RTO

This form summaries a workplace assessment process and allows workplace assessors to make recommendations to an RTO about deeming competence of a learner or RPL applicant.

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Enclosure B1 – Notification of a Workplace Assessment

Learners Name: _____ Date of notification: / /

Assessors Name: _____ Tel: _____

Qualification Title: _____

The workplace assessment will be carried out on the following Competency standard units		For the following reason (tick)	
Unit No.	**Unit Title**	**Advice**	**Completion**

Location _____ Date: / / Time: _____

Information has already been gathered from or is to be gathered from the following sources indicated below.

No	Source of Information		Already Gathered (tick)	To be Gathered (tick
1	**Work Activity Records** - experiences mostly relate to re-occurring workplace events.	Paper Based		
		Electronic		
2	**Technical Results** (i.e. modules) – part of the program that develops your technical knowledge and skill			
3	**Portfolio** – personal and academic detail, employment and work achievements, references and the like			
4	**Self Analysis** – provides guidance on the type of evidence required and guides reference to other information			
5	**Item Range** - list of components, tools, systems, plant, test equipment, etc on which experience is gained			
6	**Supervisor's Report** - general comments about applying technical skills, being safe and productive			
7	**Soft Skills Report** - your ability to follow instructions, deal with clients and work in teams			
8	**Questioning** - covers issues related to your performance when planning, carrying out and completing work			
9	**Practical Demonstration** - a demonstration of your ability to perform tasks in a actual or simulated situation			
10	**Final Test** – evidence related to critical aspects of what is required by you to demonstrate competence			
11	**Other** (list)			

Note: Once all the information is collected and the data analysed the results about your progress towards or achievement of competence will be forwarded to you for your comments. If you require any additional information you should contact the assessor (above telephone number) or your nominated supervisor/mentor.

Name_____ Signature _____

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Enclosure B2 – Application for Recognition of Prior Learning/ Current Competence

Name: _____Date of Birth: / /

Address: _____

Telephone: _____Mobile _____e-mail_____

Recognition Sought _____

Training Package _____

Qualification No. and Title _____

Competency Standard Units (Candidate to List)

Unit Title	Unit No.

Evidence Provided

Type	Tick if Attached
Certificates	
Curriculum Vitae	
Transcript of Academic Record – modules completed/equivalent	
References	
(other)	

Referees

Name	Organisation and Title of Referees	Contact Number of Referees

Candidate's Signature: _____ Date: / /

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Enclosure B3 – Assessee comment/feedback

To be completed by the candidate following an assessment event

Location: _____Date: ____/____/____Time: _____

Assessor's Name: _____

Please complete the following and return it to the Assessor.

Candidates' Name: _____

Contact N^{o}: _____

I have read the Final Report for this assessment event and,

	(tick)
Agree with the outcome.	☐
or	
Disagree with the outcome.	☐

Comments:

_____

_____

_____

_____

_____

_____

_____

_____

Candidate's Signature: _____ **Date:** _____/_____/_____

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Enclosure B4 – Candidates competency achievement report to RTO

This recommendation is made to (enter RTO name) _____

It is recommended that (learner's name) _____
(contact and identification details) _____
_____ be attributed competence in the following Competency standard units.

These Units are from the Qualification (Title and No.)
_____

Unit No.	Competency standard unit Title	Assessors Initials

The recommendation was made based on analysed evidence taken from the following sources	Tick
Work Activity Records	
Module (Learning Specification) Results	
Portfolio	
Self Analysis	
Item Range – Learner's Report	
Supervisor's Report	
Soft Skills Report	
Questioning	
Practical Demonstration	
Final Test	
Other (enter)	

Statement

The recommendation to attribute competence to the above mentioned individual is based on the evidence requirements outlined in Competency Standard Units from the

_____
(Enter the Number and Title of the Training Package.)

Assessor's Name _____

Signature _____ Date: / /

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Appendix B – Enclosure C: Glossary of Terms

Definitions of all terms used in this section are set out below.

Term	Definition/Explanation
Appeal process	A process whereby the person being assessed or other interested party, such as an employer, may dispute the outcome of an assessment and seek reassessment.
Assessment	The process of collecting evidence and making judgements on whether competency has been achieved to confirm that an individual can perform to the standard expected in the workplace as expressed in the relevant endorsed industry/enterprise competency standards or outcomes of accredited courses.
Assessment context	The environment in which the assessment will be carried out. This will include physical and operational factors, the assessment system within which assessment is carried out, opportunities for gathering evidence in a number of situations, the purpose of the assessment, who carries out the assessment and the period of time during which it takes place.
Assessment guidelines	Assessment guidelines are the endorsed component of a Training Package which underpins assessment and which sets out the industry approach to valid, reliable, flexible and fair assessment. Assessment guidelines include the assessment system overview, assessor requirements, designing assessment resources, conducting assessment and sources of information on assessment.
Assessment judgement	Assessment judgement involves the assessor evaluating whether the evidence gathered is valid and authentic, and whether there is sufficient and reliable evidence to make the assessment decision. The assessment judgement will involve the assessor in using professional judgement in evaluating the evidence available.
Assessment materials	Assessment materials are any resources that assist in any part of the assessment process. They may include information for the candidate, assessment tools or resources for the quality assurance arrangements of the assessment system.
Assessment plan	An assessment plan is a document developed by an assessor that includes the elements and Competency Standard Units to be assessed, when the assessment will occur, how the assessment will occur, the assessment methods to be used and the criteria for the assessment decision.
Assessment process	The assessment process is the agreed series of steps that the candidate undertakes within the enrolment, assessment, recording and reporting cycle. The process must suit the needs of all stakeholders and be both efficient and cost-effective. The agreed assessment process is often expressed as a flow chart.
Assessment strategy	Assessment strategy means the approach to assessment and evidence gathering used by the assessor or RTO. It encompasses the assessment process, methods and assessment tools.

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Term	Definition/Explanation
Assessment system	An assessment system is a controlled and ordered process designed to ensure that assessment decisions made in relation to many individuals, by many assessors, in many situations are consistent, fair, valid and reliable.
Assessment tool	An assessment tool contains both the instrument and the instructions for gathering and interpreting evidence: • Instrument[s] — the specific questions or activity developed from the selected assessment method[s] to be used for the assessment. A profile of acceptable performance and the decision making rules for the assessor may also be included. • Procedures — the information/instructions given to the candidate and/or the assessor regarding conditions under which the assessment should be conducted and recorded.
Candidate	A candidate is any person presenting for assessment. The candidate may be: • a learner undertaking training in an institutional setting • a learner/worker undertaking training in a workplace • an experienced worker wanting their skills recognised • any combination of the above.
Competency	The specification of knowledge and skill and the application of that knowledge and skill to the standards of performance required in the workplace.
Competency standard	Competency standards define the competencies required for effective performance in the workplace. Standards are expressed in outcome terms and have a standard format comprising of Unit title, Unit descriptor, Elements of Competency, Performance Criteria, Range Statement and Evidence Guide. See also Unit[s] of Competency.
Competency standard unit	Also see Unit of Competency
Critical aspects of competency	A statement in a Unit of Competency that provides clear meaning as to what is to be achieved in the assessment process.
Currency of evidence	Evidence that is relevant to what is outlined in competency units and not outdated or irrelevant.
Dimensions of competency	The concept of competency includes all aspects of work performance and not only narrow task skills. The four components of competency are: • task skills • task management skills • contingency management skills • job/role environment skills.
Electronic Profiling	An innovative electronic based logbook system used by apprentices to record, and report on their workplace activities. A specially designed data entry card is used to capture work experiences (eg weekly) against industry approved competency standards and reported against industry-defined benchmarks. *See* Section 1.3.5 Assessment Processes within the Electrotechnology Industry and section Appendix A – Enclosure A11 Contracted entry level Profiling Model.

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Term	Definition/Explanation
Element of Competency	The basic building block of the Competency Standard Unit. Elements describe the tasks that make up the broader function or job described by the unit.
Essential Knowledge and Associated Skills clauses	EKAS clauses provide the content specifications that must be achieved by learners in terms of the body of essential knowledge and associated skills.
Essential Knowledge and Associated Skills learning specification	EKAS learning specification is specific learning content that is complete in itself and expands on the Competency Standard Units EKAS clauses in terms of depth and breath. It may underpin many, few or one Competency Standard Unit(s). It covers one or more aspects of knowledge and skills. An EKAS LS can be separately delivered and assessed with percentage achievement reporting, and may be linked with other EKAS LSs for delivery purposes in the same discipline area.
Evidence / quality evidence	Evidence is information gathered which, when matched against the performance criteria, provides proof of competency. Evidence can take many forms and be gathered from a number of sources. Assessors often categorise evidence in different ways for example: • direct, indirect and supplementary sources of evidence • evidence collected by the candidate or evidence collected by the assessor • historical and recent evidence collected by the candidate and current evidence collected by the assessor. Quality evidence is valid, authentic, sufficient and current. It enables the assessor to make the assessment judgement.
Evidence gathering techniques	Evidence gathering technique means the particular technique or method used to gather different types of evidence. This may include methods or techniques such as questioning, observation, third party reports, interviews, simulations and portfolios.
Evidence Guide	Evidence Guide is part of a Competency Standard Unit. Its purpose is to guide assessment of the unit in the workplace and/or a training environment. The Evidence Guide specifies the context of assessment, the critical aspects of evidence and the required or underpinning knowledge and skills. The Evidence Guide relates directly to the Performance Criteria and Range Statement defined in the Competency Standard Unit.
Fairness	See section 1.3.4 Assessment Principles
Flexibility	See section 1.3.4 Assessment Principles
Holistic / integrated assessment	An approach to assessment that covers the clustering of multiple units/elements from relevant competency standards. This approach focuses on the assessment of a 'whole of job' role or function that draws on a number of units/elements of competence. This assessment approach also integrates the assessment of the application of knowledge, technical skills, problem solving and demonstration of attitudes and ethics.

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Term	Definition/Explanation
Industry Skills Council/Industry Training Advisory Bodies (ITABs)	National bodies comprising representation from the industry parties responsible for the development, review, implementation, and providing advice on qualifications scopes and competency standards in given industries.
Module	A specific learning segment that is complete in itself. It deals with one or more aspects of knowledge and skills. A module is separately delivered and assessed and may be linked with other modules in the same study area and aligned to a competency standard unit(s).
New Apprenticeship Centre	An organisation who provides information on apprenticeships, traineeships and the related qualifications and processes.
Portfolio	See section 1.3.5 Assessment Processes in the Electrotechnology Industry.
Profiling	See section 1.3.5 Assessment Processes in the Electrotechnology Industry.
Performance Criteria	Evaluative statements which specify what is to be assessed and the required level of performance. The Performance Criteria specify the activities, skills, knowledge and understanding that provides evidence of competent performance for each Element Of Competency.
Qualification	Qualification means, in the vocational education and training sector, the formal certification, issued by a Registered Training Organisation under the Australian Qualifications Framework, that a person has achieved all the requirements for a qualification as specified in an endorsed Training Package or in an Australian Qualifications Framework accredited course where no relevant Training Package exists.
Range Statement	Part of a competency standard, which sets out a range of contexts in which performance can take place. The range helps the assessor to identify the specific industry or enterprise application of the Competency Standard Unit.
Reasonable adjustment	The nature and range of adjustment to an assessment tool or assessment method which will ensure valid and reliable assessment decisions but also meet the characteristics and background of the person(s) being assessed.
Recognition [Recognition of Prior Learning, Recognition of Current Competency and Skills Recognition]	Recognition is a term applied to Recognition of Prior Learning, Recognition of Current Competency and Skills Recognition. These all refer to acknowledgement of competencies currently held, regardless of how, when or where the learning occurred. Under the Australian Recognition Framework, competencies may be attained in a number of ways. This includes through any combination of formal or informal training and education, work experience or general life experience. In order to grant recognition of prior learning/current competency the assessor must be confident that the candidate can present evidence that he or she is currently competent against the endorsed industry or enterprise competency standards or outcomes specified in Australian Recognition Framework accredited courses. The evidence may take a variety of forms and could include certification, references from past employers, testimonials from clients and work samples. The assessor must ensure that the evidence is authentic, valid, reliable, current and sufficient.

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Term	Definition/Explanation
Records of assessment	The information of assessment outcomes that is retained by the Organisation that is responsible for issuing the nationally recognised Statement of Attainment or qualification.
Registered Training Organisation (RTO)	Registered Training Organisation (RTO) means a training organisation registered in accordance with the Australian Recognition Framework, within a defined scope of registration (see Scope of Registration).
Reliability	See section 1.3.4.Assessment Principles
Sampling	See section 1.3.5 Assessment Processes in the Electrotechnology Industry.
Statement of Attainment	Statement of Attainment means a record of learning, recognised under the AQF, which although falling short of an AQF qualification, may contribute towards a qualification outcome, either as attainment of competencies within a Training Package, partial completion of an AQF accredited course leading to a qualification, or completion of a nationally accredited short course which may accumulate towards a qualification through Recognition of Prior Learning processes.
Sufficiency of evidence	See section 1.3.4 Assessment Judgments
Training Package	Training Package is an integrated set of nationally endorsed competency standards, assessment guidelines and Australian Qualifications Framework qualifications for a specific industry, industry sector or enterprise.
Training Agreement	An agreement outlining the training and assessment which forms part of a New Apprenticeship Training Contract and is registered with the relevant State or Territory Training Authority.
Training Plan	Training Plan means a program of training and assessment which forms part of a New Apprenticeship/traineeship Training Contract and is registered with the relevant State or Territory Training Authority.
Transcript of results — statement	List of candidate modules/subjects/ EKAS learning specifications completed as part of a Competency Standard Unit(s) or qualification.
Unit(s) of Competency / Competency standard units	Competency Standard Unit means the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance required in the workplace. Competency Standard Units define the outcomes for training delivery and assessment and lead to the issuing of Australian Qualifications Framework qualifications and Statements of Attainment. See also *Competency Standard*.
Validity	See section 1.3.4 Assessment Principles
Validation	Validation involves reviewing, comparing and evaluating assessment processes, tools and evidence contributing to judgements made by a range of assessors against the same standards. Validation strategies may be internal processes with stakeholder involvement or external validations with other providers and/or stakeholders.

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