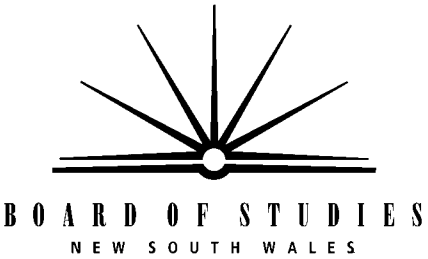

Stage 6 Syllabus

Electrotechnology Curriculum Framework

Part A

Course Structures and Requirements

For implementation from 2008

Electrotechnology (120 indicative hours)
Electrotechnology (240 indicative hours)
Electrotechnology School-based Traineeship Specialisation (60 indicative hours)
Electrotechnology Extension (60 indicative hours)
Electrotechnology School-based Apprenticeship (240 indicative hours)
Electrotechnology School-based Apprenticeship Specialisation (60 or 120 indicative hours)

2008

Original published version updated:
June 2009 – Assessment and Examination information updated

Acknowledgements

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Contents

1 Introduction to Industry Curriculum Frameworks

Industry curriculum frameworks give students the opportunity to gain credit towards the NSW Higher School Certificate (HSC) and credit towards national vocational qualifications under the Australian Qualifications Framework (AQF).

Industry curriculum frameworks are based on nationally endorsed Training Packages. They specify the range of industry-developed units of competency from the relevant Training Packages which are suitable for the HSC. They also define how units of competency are arranged in HSC Vocational Education and Training (VET) courses to gain unit credit for the HSC.

This Industry Curriculum Framework document contains the HSC Electrotechnology VET courses to be delivered for the HSC by schools, TAFE NSW colleges and other Registered Training Organisations (RTOs) on behalf of schools or TAFE NSW colleges.

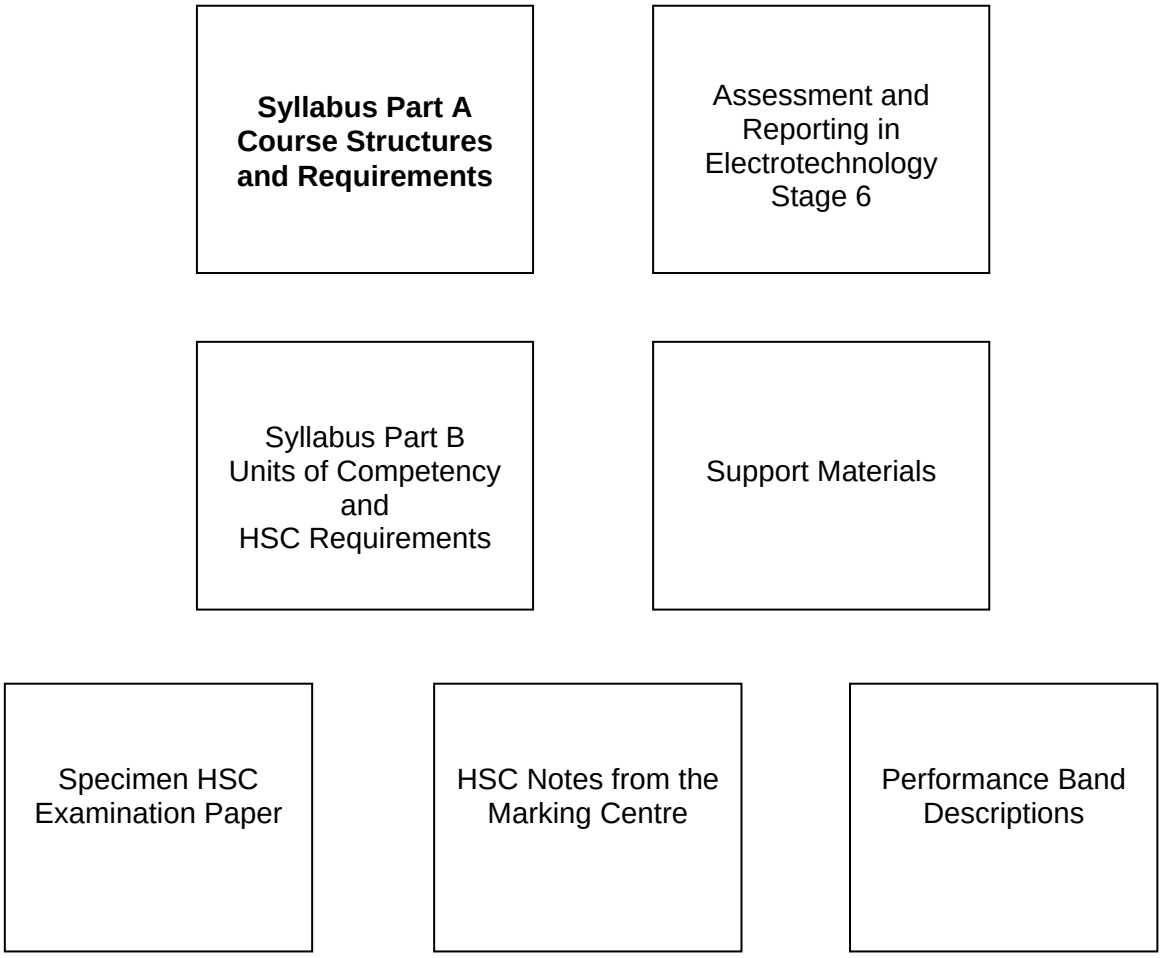
2 Documents Associated with Industry Curriculum Frameworks

The purpose of the industry curriculum framework documents is to assist teachers and trainers to develop teaching and assessment programs, and to help manage competency achievement by HSC candidates.

Part A of the *Electrotechnology Curriculum Framework Stage 6 Syllabus* describes how students may achieve unit credit towards the HSC and credit towards a vocational qualification. It contains general advice about the Electrotechnology Curriculum Framework and describes course structures and requirements, including work placement. This document should be used as the first reference when planning to implement courses for the HSC.

The set of documents associated with the Framework is shown below.

2.1 Industry Curriculum Framework documents



3 The Higher School Certificate Program of Study

The purpose of the HSC program of study is to:

- provide a curriculum structure which encourages students to complete secondary education
- foster the intellectual, social and moral development of students, in particular developing their:
  - knowledge, skills, understanding and attitudes in the fields of study they choose
  - capacity to manage their own learning
  - desire to continue learning in formal or informal settings after school
  - capacity to work with others
  - respect for the cultural diversity of Australian society
- provide a flexible structure within which students can prepare for:
  - further education and training
  - employment
  - full and active participation as citizens
- provide formal assessment and certification of students' achievements
- provide a context within which schools also have the opportunity to foster students' physical and spiritual development.

4 Vocational Education and Training (VET) in the NSW HSC

4.1 The national context

VET programs offered for the HSC are consistent with the National Training Framework (NTF). The NTF is the system of vocational education and training that:

- applies nationally
- is made up of the Australian Quality Training Framework (AQTF) and nationally endorsed Training Packages. The AQTF is the agreed quality framework for the national VET system.

The Australian Qualification Framework (AQF) is the policy framework that defines all qualifications recognised nationally in post-compulsory education and training in Australia. HSC VET course qualifications are recognised within the AQF.

4.2 Determination of AQF VET qualifications for HSC students

The HSC VET industry curriculum frameworks are based on units of competency and qualifications contained in nationally endorsed Training Packages. These AQF VET qualifications are determined by the qualification rules for each Training Package, referred to as *qualification packaging rules*. The qualification packaging rules describe the number and range of units of competency required for eligibility for an AQF VET qualification.

Course structures for the HSC are described in each industry curriculum framework syllabus. In order to have satisfactorily completed a framework course, students must follow the course structure, attempt the required units of competency with diligence and sustained effort, and fulfil work placement requirements.

The rules and structure of HSC VET courses are not always identical to the qualification packaging rules. In some cases more units of competency are required for the HSC course than are required for successful completion of the AQF VET qualification.

In some HSC courses, students might not achieve all of the specified units of competency for the purposes of the HSC, but may still be eligible for the qualification as a result of meeting the requirements of the packaging rules for that AQF VET qualification.

Sections 8.4, 8.5, 8.6, 8.7, 17.1 and 17.2 outline the course structures within the Electrotechnology Curriculum Framework.

Section 15 outlines the qualification packaging rules for each AQF VET qualification available through the Electrotechnology Curriculum Framework (reproduced directly from the Training Package) and should be consulted when selecting elective units of competency.

5 Rationale

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 is growing, 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.

Workers in this field 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.

The Electrotechnology Training Package (UEE07) offers qualifications from Certificate I to Advanced Diploma and specifies the competencies required for each. The Electrotechnology Curriculum Framework is based on units of competency from this Training Package.

The two Certificate II (Career Start) qualifications are work entry programs providing foundation in safety, basic skills and knowledge for entry-level work in any electrotechnology discipline.

The inclusion of courses in electrotechnology in the HSC based on industry-recognised AQF VET qualifications allows students to access both long-term and short-term employment opportunities. Courses within the Electrotechnology Curriculum Framework provide an opportunity for students to gain a Certificate I and/or II and/or Statement of Attainment towards Certificate III as part of their HSC. Apart from being nationally recognised, these AQF VET qualifications articulate into higher-level qualifications in the electrotechnology industry, including those that underpin apprenticeship and traineeship pathways which students may pursue post-school.

Careers available include electrician, data communications worker, electronics specialist, computer servicing/assembly worker, electronics servicing worker, electronics assembly and repair worker, antennae equipment installer, renewable energy servicing worker, electrical trades assistant, renewable energy worker, electrical wholesaling, electrical trades assistant, electrical assembly, instrumental trade assistant, refrigeration and air-conditioning split-system affixer, clerical assistant, vegetation control worker (powerline-related), lineworker assistant and essential utilities worker.

The Framework also provides an optional HSC examination, which allows results from the Electrotechnology (240 indicative hours) course and Electrotechnology School-based Apprenticeship (240 indicative hours) course to contribute to the calculation of the Australian Tertiary Admission Rank (ATAR).

Learning in each HSC course within the Electrotechnology Curriculum Framework provides opportunities for students to develop relevant technical, vocational and interpersonal competencies suitable for employment and further training in the electrotechnology industry including employability skills which are a key feature of each qualification available through the Framework. It also provides skills, knowledge and experiences – such as teamwork, communication and occupational health and safety – that are transferable to other industry areas.

6 Aim

The Electrotechnology Curriculum Framework is designed to enable students to acquire a range of technical, practical, personal and organisational skills valued both within and beyond the workplace. They will also acquire underpinning knowledge and skills related to work, employment and further training within the electrotechnology industry. Through the study of this subject, students will gain experiences that can be applied in a range of contexts, including work, study and leisure and that will assist them to make informed career choices.

7 Electrotechnology Curriculum Framework

7.1 Training Package qualifications

The Electrotechnology Curriculum Framework is based on the national **Electrotechnology Training Package (UEE07)**.

The Electrotechnology Training Package incorporates six nationally recognised qualification levels ranging from AQF Certificate I in ElectoComms Skills to Advanced Diplomas in several specialist areas.

7.2 AQF VET qualifications available in the Electrotechnology Curriculum Framework

The AQF VET qualifications available in the Electrotechnology Curriculum Framework are listed in Table 1 below. Section 15 of this document outlines the qualification packaging rules for the qualifications available through the courses within the Framework.

A Statement of Attainment will be issued for achievement of single or multiple units of competency. At a later date, a person can undertake further skill development or training and be assessed against additional competencies until they have achieved all the competencies required for an AQF VET qualification. RTOs must recognise and give credit for the competencies recorded on a Statement of Attainment.

Table 1 Electrotechnology Training Package qualifications

Qualifications available within the Electrotechnology Training Package (UEE07)		**Qualifications available within the Electrotechnology Curriculum Framework**	
National code	*Qualification name*	*Certificate*	*Statement of Attainment*
UEE10107	Certificate I in ElectroComms Skills	✓	✓
UEE20107	Certificate II in Air-Conditioning Split Systems	–	–
UEE20207	Certificate II in Business Equipment Servicing	–	–
UEE20407	Certificate II in Winding and Assembly	–	–
UEE20507	Certificate II in Computer Assembly and Repair	–	✓
UEE20607	Certificate II in Custom Electronics Assembly and Setup	–	–
UEE20707	Certificate II in Data and Voice Communications	–	–
UEE20907	Certificate II in Electronic Assembly	–	–
UEE21007	Certificate II in Fire Alarms Servicing	–	–
UEE21107	Certificate II in Gaming Machines Servicing	–	–
UEE21207	Certificate II in Antennae Equipment	–	–
UEE21307	Certificate II in Remote Area Essential Service	–	–
UEE21407	Certificate II in Remote Area Power Supply Maintenance	–	–
UEE21507	Certificate II in Renewable Energy	–	–
UEE21607	Certificate II in Security Assembly and Setup	–	–
UEE21707	Certificate II in Technical Support	✓	✓

Table 1 cont/d

Qualifications available within the Electrotechnology Training Package (UEE07)		Qualifications available within the Electrotechnology Curriculum Framework	
UEE21807	Certificate II in Appliance Servicing – Refrigerants	–	–
UEE21907	Certificate II in Electronics	–	–
UEE22007	Certificate II in Electrotechnology (Career Start)	✓	✓
UEE22107	Certificate II in Sustainable Energy (Career Start)	✓	✓
UEE30107	Certificate III in Business Equipment	–	–
UEE30207	Certificate III in Computer Systems Equipment	–	–
UEE30307	Certificate III in Custom Electronics Installations	–	–
UEE30407	Certificate III in Data and Voice Communications	–	–
UEE30507	Certificate III in Appliance Servicing	–	–
UEE30607	Certificate III in Electrical Machine Repair	–	–
UEE30707	Certificate III in Switchwear and Control Gear	–	–
UEE30807	Certificate III in Electrotechnology Electrician	–	✓
UEE30907	Certificate III in Electronics and Communications	–	–
UEE31007	Certificate III in Fire Protection Control	–	–
UEE31107	Certificate III in Gaming Electronics	–	–
UEE31207	Certificate III in Instrumentation and Control	–	–
UEE31307	Certificate III in Refrigeration and Air-Conditioning	–	✓
UEE31407	Certificate III in Security Equipment	–	–
UEE31507	Certificate III in Rail – Communications and Networks	–	–
UEE31707	Certificate III in Hazardous Areas – Electrician	–	–
UEE31807	Certificate III in Hazardous Areas – Instrumentation	–	–
UEE31907	Certificate III in Explosion – Protected Equipment Overhaul	–	–
UEE32007	Certificate III in Renewable Energy – ELV	–	–
UEE40107	Certificate IV in Computer Systems	–	–
UEE40207	Certificate IV in Electrical – Data and Voice Communications	–	–
UEE40307	Certificate IV in Electrical Installation Inspection and Audits	–	–
UEE40407	Certificate IV in Electrical – Instrumentation	–	–
UEE40507	Certificate IV in Electrical – Air-Conditioning Systems	–	–
UEE40607	Certificate IV in Electrotechnology – Systems Electrician	–	–
UEE40707	Certificate IV in Electronics and Communications	–	–
UEE40807	Certificate IV in Electrical – Fire Protection Control Systems	–	–
UEE40907	Certificate IV in Industrial Electronics and Control	–	–
UEE41007	Certificate IV in Energy Management and Control	–	–
UEE41107	Certificate IV in Electrical – Lift Systems	–	–
UEE41207	Certificate IV in Electrical – Rail Signalling	–	–
UEE41307	Certificate IV in Refrigeration and Air-Conditioning Servicing	–	–

Table 1 cont/d

Qualifications available within the Electrotechnology Training Package (UEE07)		**Qualifications available within the Electrotechnology Curriculum Framework**	
UEE41407	Certificate IV in Refrigeration and Air-Conditioning Systems	–	–
UEE41507	Certificate IV in Video and Audio Systems	–	–
UEE41607	Certificate IV in Renewable Energy	–	–
UEE41707	Certificate IV in Rail – Communications and Network Systems	–	–
UEE41807	Certificate IV in Hazardous Areas	–	–
UEE41907	Certificate IV in Electrical – Renewable Energy	–	–
UEE50107	Diploma of Computer Systems Engineering	–	–
UEE50207	Diploma of Electrical and Instrumentation	–	–
UEE50307	Diploma of Electrical and Refrigeration and Air-Conditioning	–	–
UEE50407	Diploma of Electrical Engineering	–	–
UEE50507	Diploma of Electronics and Communications Engineering	–	–
UEE50607	Diploma of Refrigeration and Air-Conditioning Engineering	–	–
UEE50707	Diploma of Renewable Energy Engineering	–	–
UEE50807	Diploma of Research and Development	–	–
UEE50907	Diploma of Industrial Electronics and Control Engineering	–	–
UEE60107	Advanced Diploma of Electrical Engineering	–	–
UEE60207	Advanced Diploma of Electronics and Communications Engineering	–	–
UEE60307	Advanced Diploma of Electronic – Technology	–	–
UEE60407	Advanced Diploma of Computer Systems Engineering	–	–
UEE60507	Advanced Diploma of Computer Systems – Technology	–	–
UEE60607	Advanced Diploma of Industrial Electronics and Control Engineering	–	–
UEE60707	Advanced Diploma of Refrigeration and Air-Conditioning Engineering	–	–
UEE60807	Advanced Diploma of Refrigeration and Air-Conditioning – Technology	–	–
UEE60907	Advanced Diploma of Renewable Energy Engineering	–	–
UEE61007	Advanced Diploma of Renewable Energy – Technology	–	–
UEE61107	Advanced Diploma of Automated Systems Maintenance Engineering	–	–
UEE61207	Advanced Diploma of Engineering – Explosion Protection	–	–
UEE61307	Advanced Diploma of Electrical – Technology	–	–

8 Course Structures

8.1 Courses within the Electrotechnology Curriculum Framework

An industry curriculum framework describes the units of competency that have been identified as being suitable for the purposes of the HSC. Units of competency in the Electrotechnology Curriculum Framework are detailed in **Sections 8.4, 8.5, 8.6, 8.7, 17.1 and 17.2**.

Each course in a framework describes how the available units of competency can be grouped to gain units of credit towards the HSC.

The Electrotechnology Curriculum Framework contains the following courses:
- Electrotechnology (120 indicative hours)
- Electrotechnology (240 indicative hours)
- Electrotechnology School-based Traineeship Specialisation (60 indicative hours)
- Electrotechnology Extension (60 indicative hours)
- Electrotechnology School-based Apprenticeship (240 indicative hours)
- Electrotechnology School-based Apprenticeship Specialisation (60 or 120 indicative hours).

The maximum number of Preliminary and/or HSC units available from this Framework is six units. That is, courses can total up to 360 hours. In addition to courses within the Framework, students may undertake locally designed Board Endorsed VET courses drawing from the Electrotechnology Training Package (UEE07). Such courses may provide additional HSC credit for students.

Compulsory units of competency are those that all students must attempt in their study of the HSC course (refer to Section 8, Tables 2 and 3 and Section 17, Table 10).

Examinable units of competency are those that can be examined in the optional HSC examination (refer to Section 11.3).

Core units of competency are those required by the Electrotechnology Training Package for a student to be eligible for the vocational qualification (refer to Section 15).

8.1.1 The selection of units of competency

Units of competency should be selected within course structures to maximise students' eligibility for AQF VET qualifications and an occupational outcome. **Section 15** provides the qualification packaging rules for the qualifications available through the Electrotechnology Curriculum Framework (reproduced directly from the Training Package). **Table 8** (pp 75–78), **Table 9** (pp 79–81) and **Table 12** (pp 92–93) list the status of each unit of competency in relation to the qualifications. This information should be consulted when selecting elective units of competency.

An integrated or holistic approach to course delivery should be adopted. Examples of integrated approaches to programming and assessment strategies that may be used to support the delivery of courses within the Electrotechnology Curriculum Framework are contained in the *Electrotechnology Curriculum Framework Support Materials* (www.boardofstudies.nsw.edu.au). This information is provided as a guide to RTOs delivering HSC courses within the Framework.

8.2 Allocation of HSC indicative hours of credit

Units of competency drawn from Training Packages are not defined in terms of duration. The amount of time required by individual students to achieve competency will vary according to their aptitude and experience. Where a training program is designed for delivery by an RTO, the RTO will specify the length of the training program according to the delivery strategies and/or curriculum resources chosen.

However, for the purposes of the HSC, courses must be described in terms of their indicative hours. For this reason, indicative hours for unit credit towards the HSC have been assigned to each unit of competency within the Framework. It is emphasised that the assignment of indicative hours does not imply that all students will fulfil all requirements of a unit of competency within these hours. RTOs may determine that additional or fewer hours are required for the achievement of particular competencies. However, this does not alter the indicative hours allocated, only the delivery hours.

It is also expected that students will need to spend additional time practising skills in a work environment and in completing projects and assignments, in order to fulfil Training Package assessment requirements.

Tables 2–6 (Section 8) and **Tables 10 and 11** (Section 17) list the indicative hours assigned to each unit of competency included in the Electrotechnology Curriculum Framework for the purpose of unit credit towards the HSC.

8.3 Recognition of Prior Learning (RPL) and credit transfer

Recognition of Prior Learning (RPL) and credit transfer refer to the acknowledgement of evidence of a student's achievement of competencies or learning outcomes. They are processes that allow students to have their previous learning – both formal and informal – count towards their HSC VET courses and AQF VET qualifications.

RPL is an assessment process that assesses the individual student's non-formal and informal learning to determine the extent to which that individual has achieved the competency standards. **Where the outcomes of this process indicate that the student is competent, structured training is not required.**

Credit transfer is a process that provides credit for a unit of competency previously achieved. **Students should be given recognition for units of competency already held. Structured training or assessment for these units is not required.**

The RPL requirements of the AQTF and the Board of Studies must be met.

8.3.1 Recognition of Prior Learning (RPL) and credit transfer within VET courses

Students undertaking HSC courses within the Electrotechnology Curriculum Framework may already hold units of competency or have current knowledge, skills and experience relevant to the units of competency within the courses.

Students can be granted credit (recognition of prior learning or credit transfer) for:

- units of competency within AQF VET qualifications
- HSC VET course outcomes and content as defined by the indicative hour requirements of HSC VET courses
- mandatory work placement requirements.

Further information about the arrangements for RPL and credit transfer within VET courses, including processes, application forms and examples of possible scenarios, is available on the Board's website at www.boardofstudies.nsw.edu.au/voc_ed/rpl.html .

8.4 Electrotechnology (120 indicative hours)

Purpose

The purpose of this course is to provide students with an opportunity to perform basic work activities for, and gain knowledge of, the electrotechnology–communications industry.

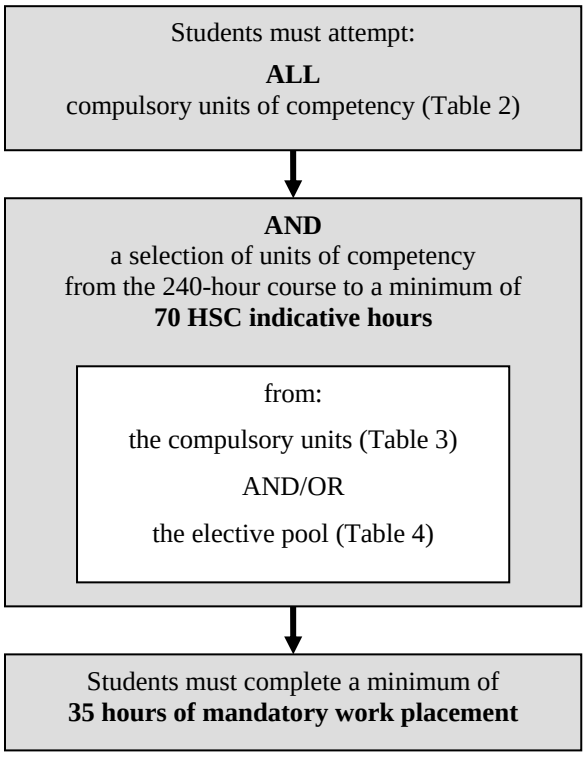
Course structure

This course comprises three compulsory units of competency and a selection of units of competency from the 240-hour course.

Section 15 outlines the qualification packaging rules for qualifications available through the Electrotechnology Curriculum Framework. Tables 8 and 9 (pp 75–81) list the status of each unit of competency in relation to the qualifications. This section should guide the selection of units of competency to meet qualification requirements.

120 indicative hour courses are accredited for a total of 2 units at the Preliminary and/or HSC level.

Course requirements – Electrotechnology (120 indicative hours)



AQF VET qualifications

To receive AQF VET qualifications, students must meet the assessment requirements of the Electrotechnology Training Package (UEE07). A qualified assessor must conduct the assessment.

Depending on the selection and achievement of units of competency, the possible qualification outcome is:

- Certificate I in ElectroComms Skills (UEE10107)
- Statement of Attainment towards Certificate II in Computer Assembly and Repair (UEE20507)
- Statement of Attainment towards Certificate II in Technical Support (UEE21707)
- Statement of Attainment towards Certificate II in Electrotechnology (Career Start) (UEE22007)
- Statement of Attainment towards Certificate II in Sustainable Energy (Career Start) (UEE22107).

Qualification packaging rules are in Section 15 of this document.

Further information on assessment is in Section 11 of this document and in the document *Assessment and Reporting in Electrotechnology Stage 6*.

Table 2 Electrotechnology (120 indicative hours) – compulsory units of competency

COMPULSORY **Attempt ALL units of competency**			
Unit code	**Unit title**	**Unit-specific prerequisite**	**HSC indicative hours of credit**
UEENEEC010B	Deliver a service to customers	Nil	10
UEENEEE001B	Apply OHS practices in the workplace	Nil	15
UEENEEE048B	Carry out routine work activities in an electrotechnology environment	Nil	25
		Total compulsory hours	**50**

ELECTIVE UNITS **Attempt units of competency to a minimum value of 70 HSC indicative hours**
Elective units include any unit of competency from the 240-hour course which has not already been undertaken (refer to Section 8.5, Tables 3 and 4). (Note: For Certificate I in ElectroComms Skills Schedule 2 Strand weighting must total at least 3.)

8.5 Electrotechnology (240 indicative hours)

Purpose

The purpose of this course is to provide students with the opportunity to commence a work entry program providing grounding in safety and basic skills and knowledge for work in any electrotechnology discipline.

Course structure

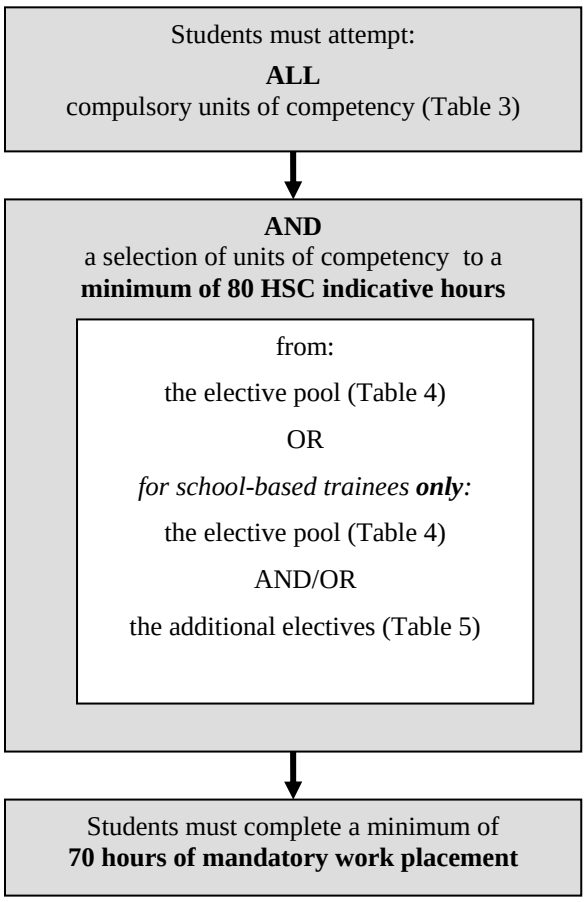
This course comprises seven compulsory units of competency and an elective pool with 24 elective units of competency.

For students undertaking an electrotechnology school-based traineeship, an additional three elective units of competency are available. **Only** school-based trainees may undertake elective units of competency from Table 5 (p 26).

Section 15 outlines the qualification packaging rules for qualifications available through the Electrotechnology Curriculum Framework. Tables 8 and 9 (pp 75–81) list the status of each unit of competency in relation to the qualifications. This section should guide the selection of units of competency to meet qualification requirements.

240 indicative hour courses are accredited for a total of 4 units at the Preliminary and/or HSC level.

Course requirements – Electrotechnology (240 indicative hours)



For students undertaking an approved school-based traineeship the mandatory work placement hour requirements for this course are met through the on-the-job training component of the school-based traineeship.

An external written Higher School Certificate examination will be conducted for this course. This examination is optional. In the year they will complete the course, students will specify whether or not they choose to undertake the external written examination (refer to Sections 11.2 and 11.3).

The units of competency for the optional HSC examination are listed in the HSC exam specifications in Section 11.3 of this document.

AQF VET qualifications

To receive AQF VET qualifications, students must meet the assessment requirements of the Electrotechnology Training Package (UEE07). A qualified assessor must conduct the assessment.

Depending on the selection and achievement of units of competency, the possible qualification outcome is:

- Certificate I in ElectroComms Skills (UEE10107)
- Statement of Attainment towards Certificate II in Computer Assembly and Repair (UEE20507)
- Statement of Attainment towards Certificate II in Technical Support (UEE21707)
- Certificate II in Electrotechnology (Career Start) (UEE22007) [#]
- Certificate II in Sustainable Energy (Career Start) (UEE22107) [§].

[#] *To achieve Certificate II in Electrotechnology (Career Start) Schedule 2 Strand weighting must total at least 7.*

[§] *To achieve Certificate II in Sustainable Energy (Career Start), Schedule 2 Strand weighting must total at least 6.*

Qualification packaging rules are in Section 15 of this document.

Further information on assessment is in Section 11 of this document and in the document *Assessment and Reporting in Electrotechnology Stage 6*.

Table 3 Electrotechnology (240 indicative hours) – compulsory units of competency

COMPULSORY **Attempt ALL units of competency**			
Unit code	**Unit title**	**Unit-specific prerequisite**	**HSC indicative hours of credit**
UEENEEC010B	Deliver a service to customers	Nil	10
UEENEEE001B	Apply OHS practices in the workplace	Nil	15
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components	Nil	30
UEENEEE003B	Solve problems in extra-low voltage single path circuits	Nil	30
UEENEEE004B	Solve problems in multiple path d.c. circuits	UEENEEE003B	35
UEENEEE005B	Fix and secure equipment	Nil	15
UEENEEE048B	Carry out routine work activities in an electrotechnology environment	Nil	25
		Total compulsory hours	**160**

Table 4 Elective pool

Attempt units of competency to a minimum value of 80 HSC indicative hours.*				
Unit code	**Unit title**	**Schedule 2 strand weighting***	**Unit-specific prerequisite**	**HSC indicative hours of credit**
Assembly				
UEENEEA002B	Select electronic components	1	Nil	15
Computer systems				
UEENEED002B	Assemble, set-up and test personal computers	4	Nil	40
UEENEED004B	Use engineering applications software	2	Nil	40
UEENEED005B	Enter and verify operating instructions in microprocessor equipped devices	1	Nil	15
UEENEED043B	Install and configure a computer operating system and software	2	Nil	40
UEENEED046B	Set up and configure basic local area network	2	UEENEED002B	40
Cross discipline				
UEENEEE007B	Use drawings, diagrams, schedules and manuals	2	Nil	25
UEENEEE008B	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	2	UEENEEE005B UEENEEE007B	30
UEENEEE023B	Solve basic problems in electronic and digital equipment	4	Nil	40
UEENEEE032B	Document occupational hazards and risks in computer systems	1	Nil	15
UEENEEE038B	Participate in development and follow a personal competency development plan	–	Nil	10
UEENEEE040B	Identify and select components/ accessories/materials for electrotechnology work activities	3	Nil	15
UEENEEE041B	Use routine equipment/plant/ technologies in an electrotechnology environment	3	Nil	20

* *To achieve Certificate II in Electrotechnology (Career Start) Schedule 2 Strand weighting must total at least 7.*

To achieve Certificate II in Sustainable Energy (Career Start), Schedule 2 Strand weighting must total at least 6.

Table 4 cont/d

Unit code	Unit title	Schedule 2 strand weighting*	Unit-specific prerequisite	HSC indicative hours of credit
Data and voice				
UEENEEF007B	Set up the wireless capabilities of communications and data storage devices	2	Nil	30
Electronics				
UEENEEH001B	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies	2	UEENEEE002B	30
UEENEEH002B	Carry out basic repairs to electronic apparatus by replacement of components	2	UEENEEE002B	30
UEENEEH004B	Set up and test residential audio/ video equipment	2	Nil	30
Refrigeration and air-conditioning				
UEENEEJ002B	Prepare refrigeration tubing and fittings	2	UEENEEE002B UEENEEE007B	30
Renewable and sustainable energy				
UEENEEK012B	Provide basic sustainable energy solutions for energy reduction in domestic premises	2	Nil	25
UEENEEK013B	Apply sustainable energy practice in daily activities	5	Nil	30
UEENEEK014B	Promote sustainable energy practice in the community	2	Nil	25
Other				
UEENEEC001B	Maintain documentation	–	Nil	10
UEENEED001B	Use basic computer applications relevant to a workplace	–	Nil	10
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	–	Nil	10

* *To achieve Certificate II in Electrotechnology (Career Start) Schedule 2 Strand weighting must total at least 7.*

To achieve Certificate II in Sustainable Energy (Career Start), Schedule 2 Strand weighting must total at least 6.

8.6 Electrotechnology School-based Traineeship Specialisation (60 indicative hours)

Purpose

The purpose of this course is to provide school-based trainees with the opportunity to gain Certificate II in Technical Support and unit credit towards their HSC.

Course eligibility

This course is available to students who meet the following requirements:

participation in an approved school-based traineeship training contract in Certificate II in Technical Support (UEE21707)

and

are currently enrolled in, or have completed, the Electrotechnology (240 indicative hours) course.

Before offering the Electrotechnology School-based Traineeship Specialisation, schools should ensure that the RTO undertaking delivery has the scope to deliver the relevant qualification or relevant units of competency.

Course structure

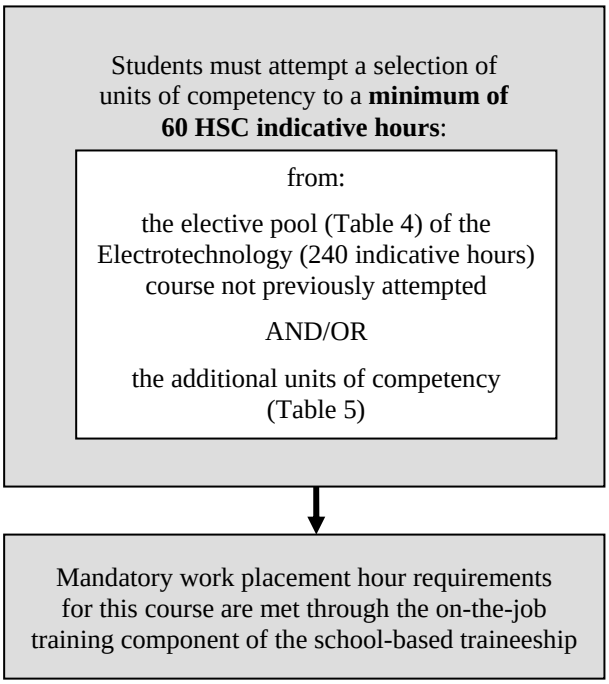
The Electrotechnology School-based Traineeship Specialisation Study can consist of units of competency drawn from the Electrotechnology 240-hour course not previously attempted by students (Table 4) and/or the pool of three additional units of competency listed in Table 5.

Details of the units of competency listed in Table 5 are not included in Part B of the Syllabus. They are available in the Electrotechnology Training Package (UEE07) or at www.ntis.gov.au.

Section 15 outlines the qualification packaging rules for qualifications available through the Electrotechnology Curriculum Framework. Tables 8 and 9 (pp 75–81) list the status of each unit of competency in relation to the qualifications. This section should guide the selection of units of competency to meet qualification requirements.

The Electrotechnology School-based Specialisation (60 indicative hours) course is accredited for a 1 unit at the Preliminary or HSC level.

Course requirements – Electrotechnology School-based Traineeship Specialisation (60 indicative hours)



AQF VET qualifications

To receive AQF VET qualifications, students must meet the assessment requirements of the Electrotechnology Training Package (UEE07). A qualified assessor must conduct the assessment.

Depending on the selection and achievement of units of competency, the possible qualification outcome is:

- Certificate II in Technical Support (UEE21707).

Table 5 Additional units of competency for Electrotechnology school-based trainees

The following additional units of competency are **only** available to students who are participating in an approved Certificate II school-based traineeship training contract in Certificate II in Technical Support (UEE21707).

Unit code	Unit title	Unit-specific prerequisite	HSC indicative hours of credit
UEENEEE022B	Carry out preparatory electrotechnology work activities	Nil	40
UEENEEE037B	Document occupational hazards and risks in electrotechnology	Nil	15
UEENEEG011B	Carry out basic repairs to electrical apparatus	UEENEEE002B	40

Qualification packaging rules are in Section 15 of this document.

Further information on assessment is in Section 11 of this document and in the document *Assessment and Reporting in Electrotechnology Stage 6*.

8.7 Electrotechnology Extension (60 indicative hours)

Purpose

The purpose of the Electrotechnology Extension is to provide students with the opportunity to gain credit towards Certificate III in Electrotechnology Electrician.

Course eligibility

This course is available to students who meet the following requirement:

> are currently enrolled in, or have completed, the Electrotechnology (240 indicative hours) course.

Before offering the Electrotechnology Extension, schools should ensure that the RTO undertaking delivery has the scope to deliver the relevant qualification or relevant units of competency.

In addition to courses within the Framework, students may undertake locally designed Board Endorsed VET courses drawing from the Electrotechnology Training Package (UEE07). Such courses may provide additional HSC credit for students.

Course structure

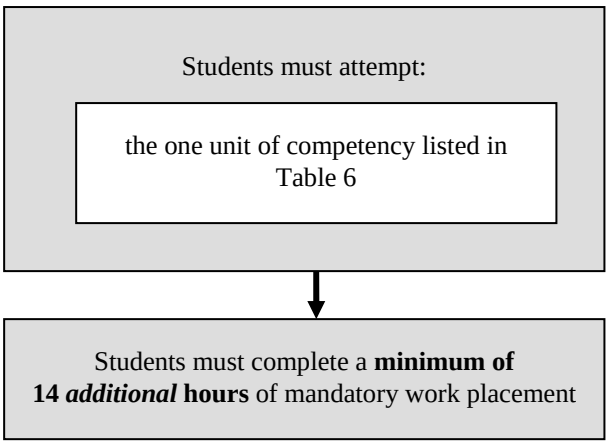
The Electrotechnology Extension consists of one AQF level III unit of competency.

Details of the unit of competency listed in Table 6 are not included in Part B of the Syllabus. It is available in the Electrotechnology Training Package (UEE07) or at www.ntis.gov.au

Section 15 outlines the qualification packaging rules for qualifications available through the Electrotechnology Curriculum Framework. Tables 8 and 9 (pp 75–81) list the status of each unit of competency in relation to the qualifications. This section should guide the selection of units of competency to meet qualification requirements.

The Electrotechnology Extension (60 indicative hours) course is accredited for a total of one unit at the Preliminary or HSC level.

Course requirements – Electrotechnology Extension (60 indicative hours)



AQF VET qualifications

To receive AQF VET qualifications, students must meet the assessment requirements of the Electrotechnology Training Package (UEE07). A qualified assessor must conduct the assessment.

Depending on the achievement of the unit of competency, the possible qualification outcome is:

- Statement of Attainment towards Certificate III in Electrotechnology Electrician (UEE30807).

Table 6 Extension unit of competency

Unit code	Unit title	Unit-specific prerequisite	HSC indicative hours of credit
UEENEEG001B	Solve problems in electromagnetic circuits	Nil	60

Qualification packaging rules are in Section 15 of this document.

Further information on assessment is in Section 11 of this document and in the document *Assessment and Reporting in Electrotechnology Stage 6*.

9 Outcomes and Content

9.1 Units of competency

The units of competency in the Electrotechnology (120 and 240 indicative hours) courses are listed in Tables 2–4. The compulsory units of competency in the Electrotechnology School-based Apprenticeship (240 indicative hours) course are listed in Table 10.

Part B of this Syllabus contains details of these units of competency reproduced directly from the Electrotechnology Training Package (UEE07). For each unit of competency the details consist of:

- elements of competency
- performance criteria
- a range statement
- required skills and knowledge
- an evidence guide, containing:
  - overview of assessment
  - critical aspects of evidence required to demonstrate competency in this unit
  - context of and specific resources for assessment
  - method of assessment
  - concurrent assessment and relationship with other units.

In addition, in Part B there is a column headed *HSC Requirements and Advice* that prescribes the scope of learning and the minimum learning experiences expected for each examinable unit of competency for the purposes of the HSC. These must be addressed by all students undertaking the Electrotechnology (120 and 240 indicative hours) courses and the Electrotechnology School-based Apprenticeship (240 indicative hours) course.

The units of competency that can be delivered and assessed are determined by the scope of the registration of each RTO. **Teachers and trainers should check their RTO's scope of registration before determining which units of competency are to be included in their teaching and assessment programs. School principals should seek documentary evidence of the scope of any external RTO delivering an HSC VET course.** Scope of registration can be checked on the National Training Information Services (NTIS) website (www.ntis.gov.au).

Information about the delivery of VET courses for the HSC by RTOs other than schools or TAFE NSW colleges are contained in the Board of Studies *Assessment, Certification and Examination (ACE) Manual* and relevant Board of Studies Official Notices.

9.2 Course delivery

RTOs offering training programs that deliver HSC Electrotechnology Curriculum Framework courses must consult Part B of this Syllabus and take into consideration the details provided in the *HSC Requirements and Advice* column (including key terms and concepts) as well as the following requirements for each unit of competency:

- the elements of competency
- the performance criteria
- the range statement
- the required skills and knowledge
- all aspects of the evidence guide.

RTOs should pay particular attention to the information under *Prerequisite Units* (to ensure these requirements have been met) and *Required Skills and Knowledge.*

Learning experiences that are compulsory learning for the Training Package are compulsory learning for the HSC. So, in the examinable units of competency, where the range statement uses the words 'must include', 'are' or 'in regard to', the relevant matter has not been repeated in the *HSC Requirements and Advice*. However, where the range statement uses the words 'may include', the *HSC Requirements and Advice* specifies which of these learning experiences must be included for the HSC.

It is the responsibility of the RTO to determine both the resources required for course delivery, and the AQF VET qualifications that must be held by teachers and trainers delivering courses within the Electrotechnology Curriculum Framework on behalf of the RTO.

Separate advice on learning materials, resource requirements and teacher qualifications is available from school system/sector authorities.

10 Work Placement

Work placement is a mandatory HSC requirement within this Framework and appropriate hours have been assigned to each course.

Learning in the workplace will enable students to:

- progress towards the achievement of industry competencies
- develop appropriate attitudes towards work
- learn a range of behaviours appropriate to the industry
- practise skills acquired in the classroom or workshop
- develop additional skills and knowledge, including the employability skills (refer to Section 13.2 and Section 15).

The mandatory work placement requirements for courses in this Framework are not intended to indicate the time required for the achievement of units of competency. The amount of learning in the workplace that is needed to achieve a unit of competency will vary.

10.1 Work placement requirements

Students must complete the following work placement for Electrotechnology Curriculum Framework courses:

- Electrotechnology (120 indicative hours) – a minimum of 35 hours in a workplace
- Electrotechnology (240 indicative hours) – a minimum of 70 hours in a workplace
- Electrotechnology School-based Traineeship Specialisation (60 indicative hours) – mandatory work placement hour requirements for this course are met through the on-the-job training component of the school-based traineeship
- Electrotechnology Extension (60 indicative hours) – a minimum of 14 *additional* hours in a workplace
- Electrotechnology School-based Apprenticeship (240 indicative hours) – mandatory work placement hour requirements for this course are met through the on-the-job training component of the school-based apprenticeship
- Electrotechnology School-based Apprenticeship Specialisation (60 or 120 indicative hours) – mandatory work placement hour requirements for this course are met through the on-the-job training component of the school-based apprenticeship.

Non-completion of work placement is grounds for the withholding of the course. Schools are advised to follow the issuing of 'N' determinations as outlined in the Board of Studies *Assessment, Certification and Examinations (ACE) Manual.*

It is the responsibility of the school and/or RTO to determine how course outcomes are best achieved and to structure delivery accordingly. If additional work placement or classroom time is required to enable individual students or class groups to achieve the competencies, this will be determined by the deliverer, but it does not affect the indicative HSC hours.

Further information and advice on the implementation of work placement are contained in policy statements or guidelines available from the relevant school system/sector authority or the RTO.

10.2 Part-time work

Under some circumstances, students' part-time work in an appropriate workplace may be used to fulfil work placement requirements. For further details, teachers and principals should consult the Board of Studies *Assessment, Certification and Examinations (ACE) Manual* or relevant Board of Studies Official Notices.

11 Assessment Requirements and Advice

11.1 Competency-based assessment

The VET courses within the Electrotechnology Curriculum Framework are competency-based. Advice on appropriate assessment practice in relation to the Electrotechnology Curriculum Framework is contained in the *Assessment and Reporting in Electrotechnology Stage 6* document.

This document, as well as other resources and advice related to assessment in Electrotechnology, is available at the Board's website at http://www.boardofstudies.nsw.edu.au/syllabus_hsc/electrotechnology.html

11.2 HSC examination: Electrotechnology

The HSC examination in Electrotechnology is optional. Only students who have completed the Electrotechnology (240 indicative hours) or Electrotechnology School-based Apprenticeship (240 indicative hours) course are eligible to sit for the HSC examination. Students who undertake the examination can have their HSC mark contribute to their ATAR.

The HSC examination specifications, which describe the format of the external HSC examination, are contained in the *Assessment and Reporting in Electrotechnology Stage 6* document.

The HSC examination is independent of the competency-based assessment undertaken during the course and has no impact on student eligibility for AQF VET qualifications.

11.3 Examinable outcomes and content

The HSC examination in Electrotechnology is based on a set of examinable units of competency from the Electrotechnology (240 indicative hours) and Electrotechnology School-based Apprenticeship (240 indicative hours) course and the associated employability skills for all qualifications at AQF Level 2 (refer to Section 15).

The HSC examination is based on the following components of each examinable unit of competency:

- elements of competency
- performance criteria
- a range statement
- required skills and knowledge
- an evidence guide, containing:
  - overview of assessment
  - critical aspects of evidence required to demonstrate competency in this unit
  - context of and specific resources for assessment
  - method of assessment
  - concurrent assessment and relationship with other units
- minimum prescribed learning contained in HSC requirements and advice, described as:
  - key terms and concepts, and
  - learning experiences that must be addressed for the HSC.

The examinable units of competency are:

Unit code	*Unit title*
UEENEEC010B	Deliver a service to customers
UEENEEE001B	Apply OHS practices in the workplace
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003B	Solve problems in extra-low voltage single path circuits
UEENEEE004B	Solve problems in multiple path d.c. circuits
UEENEEE005B	Fix and secure equipment
UEENEEE048B	Carry out routine work activities in an electrotechnology environment

The text of the examinable units of competency, including the HSC requirements and advice, is contained in the *Electrotechnology Curriculum Framework Stage 6 Syllabus – Part B.*

12 HSC Requirements and Certification

12.1 Course completion requirements

For a student to be considered to have satisfactorily completed a course within the Electrotechnology Curriculum Framework there must be sufficient evidence that the student has:

- followed the course developed by the Board
- applied themselves with diligence and sustained effort to the set tasks and experiences provided in the course by the school/RTO
- achieved some or all of the course outcomes
- undertaken the mandatory work placement.

Refer the Board's Assessment, Certification and Examination (ACE) Manual for further information.

12.2 Preliminary and HSC unit credit

To facilitate flexibility of VET in the HSC, courses within the Electrotechnology Curriculum Framework may be delivered as Preliminary units, as HSC units or as a combination of Preliminary and HSC units.

12.3 Reporting achievement in the HSC

Advice on reporting achievement in relation to the Electrotechnology Curriculum Framework is contained in the *Assessment and Reporting in Electrotechnology Stage 6* document.

This document is available at the Board's website at
http://www.boardofstudies.nsw.edu.au/syllabus_hsc/electrotechnology.html

13 Other Information

13.1 Providing for all students

13.1.1 Students with special education needs

Courses in the Electrotechnology Curriculum Framework are available to all students.

Students with special education needs may access:

- all courses within the Electrotechnology Curriculum Framework under regular course arrangements
  OR
- units of competency selected through the collaborative curriculum planning process from the relevant course units of competency detailed in Sections 8.4 and 8.5 of this document.

Students with special education needs may require adjustments to learning and assessment strategies as well as additional time to demonstrate the required level of competence. Reasonable adjustments to delivery and assessment are appropriate provided they conform to the industry competency standards as expressed in the UEE07 Training Package.

> An adjustment is any measure or action that a student requires because of their disability, and which has the effect of assisting the student to access and participate in education and training on the same basis as students without a disability.
>
> An adjustment is reasonable if it achieves this purpose while taking into account factors such as the nature of the student's disability, the views of the student, the potential effect of the adjustment on the student and others who might be affected, and the costs and benefits of making the adjustment.
>
> An education provider is also entitled to maintain the academic integrity of a course or program and to consider the requirements or components that are inherent or essential to its nature when assessing whether an adjustment is reasonable.[1]

Reasonable adjustments should be based upon the individual student's needs and abilities.

The appropriate units of competency should be selected through the collaborative curriculum planning process to work towards the achievement of an AQF VET Certificate and an occupational outcome.

It is recommended that the collaborative curriculum planning should prioritise units of competency that provide essential foundation skills for employment in the electrotechnology industry.

Successful participation in courses within the Electrotechnology Curriculum Framework for students with special education needs will require:

- collaborative curriculum planning to meet individual needs
- appropriate learning and assessment strategies
- appropriate consultation on strategies to support the mandatory work placement
- ongoing partnerships between schools, students, parents, teachers, employers and others in the community.

[1] Training Package Development Handbook Guidelines: Training Packages, www.tpdh.deewr.gov.au

To develop skills and knowledge to industry standard, students with special education needs may require extended time and additional support, both off-the-job and in the workplace.

Further advice on the implementation of the Electrotechnology Curriculum Framework for students with special education needs is contained in the *Stage 6 Industry Curriculum Frameworks Support Document for Students with Special Education Needs (2005)*. This document is available on the Board of Studies website (www.boardofstudies.nsw.edu.au).

Work placement

Students with special education needs **must** undertake the minimum work placement requirements for courses within the Electrotechnology Curriculum Framework, detailed in the course requirements for each course (Section 8) and in Section 10 of this document.

Assessment

Students with special education needs are subject to the assessment requirements detailed in Section 11 of this document and in the document *Assessment and Reporting in Electrotechnology Stage 6*.

AQF VET qualifications

Eligibility for AQF VET qualifications is the same for all students. To receive AQF VET qualifications, students with special education needs must meet the assessment requirements of the Electrotechnology Training Package (UEE07). A qualified assessor must conduct the assessment.

13.1.2 Gender and cultural considerations

Industry curriculum frameworks address the needs of a broad range of students. Material developed for teaching and assessment programs in the Electrotechnology Curriculum Framework must not contain any bias related to a student's gender or cultural background. Case studies, illustrative examples and other materials used for teaching and assessment should be selected such that they do not reinforce gender or cultural stereotypes.

13.1.3 School-based apprentices and trainees

The Electrotechnology Curriculum Framework includes provision for school-based apprentices and trainees to gain unit credit towards the HSC for the school-based formal training component of their apprenticeship or traineeship. Refer to Section 8 for a list of the AQF VET qualifications available from each HSC course within the Framework.

Students participating in a school-based traineeship in electrotechnology requiring credit towards the HSC for their training should undertake the Electrotechnology (240 indicative hours) course and the 60 indicative hours Electrotechnology School-based Traineeship Specialisation.

Students participating in a school-based apprenticeship in electrotechnology requiring credit towards the HSC for their training are eligible to undertake the Electrotechnology School-based Apprenticeship (240 indicative hours) course and Electrotechnology School-based Apprenticeship Specialisation (60 or 120 indicative hours).

Students may elect to complete the Board Endorsed *Stage 6 Industry-based Learning Course* enabling them to gain HSC credit for the on-the-job component of the school-based apprenticeship or traineeship.

Additional HSC credit may be available through the locally designed Board Endorsed Course process. Such courses may draw from units of competency in the Electrotechnology Training Package (UEE07) and can be individualised to align to a student's training plan.

Further information on requirements and arrangements for school-based apprenticeships and traineeships in the electrotechnology industry is available from:

- school system/sector authorities
- the Department of Education and Training State Training Centres
- the apprenticeships and traineeships website (http://apprenticeship.det.nsw.edu.au)
- the Department of Education and Training Vocational Education in Schools school-based apprenticeships and traineeships in NSW website (www.sbatinnsw.info)
- Australian Apprenticeship Centres.

13.2 Employability skills[2]

The Employability Skills build on and replace the Mayer Key Competencies (developed in 1992) which attempted to describe generic competencies for effective participation in work. The Business Council of Australia (BCA) and the Australian Chamber of Commerce and Industry (ACCI), in consultation with other peak employer bodies, produced the *Employability Skills for the Future* report which was officially released in May 2002. The report indicated that business and industry required a broader range of skills than the Mayer Key Competencies Framework provided and recommended the following eight Employability Skills:

- communication
- teamwork
- problem-solving
- initiative and enterprise
- planning and organising
- self-management
- learning
- technology.

The report described how Employability Skills can be more appropriately described for particular occupational and industry contexts by sets of 'facets' or important work skills.

The following table contains the Employability Skills and facets identified in the report:

[2] 13.2 Employability Skills is adapted from Training Package Development Handbook Guidelines: Units of competency, www.tpdh.deewr.gov.au

Table 7 Employability skills

Skill	**Facets** Aspects of the skill that employers identify as important. The nature and application of these facets will vary depending on industry and job type.
Communication that contributes to productive and harmonious relations across employees and customers	• listening and understanding • speaking clearly and directly • writing to the needs of the audience • negotiating responsively • reading independently • empathising • using numeracy effectively • understanding the needs of internal and external customers • persuading effectively • establishing and using networks • being assertive • sharing information • speaking and writing in languages other than English
Teamwork that contributes to productive working relationships and outcomes	• working across different ages irrespective of gender, race, religion or political persuasion • working as an individual and as a member of a team • knowing how to define a role as part of the team • applying teamwork to a range of situations eg planning and problem-solving • identifying the strengths of team members • coaching and mentoring skills, including giving feedback
Problem-solving that contributes to productive outcomes	• developing creative, innovative and practical solutions • showing independence and initiative in identifying and solving problems • solving problems in teams • applying a range of strategies to problem-solving • using mathematics, including budgeting and financial management to solve problems • applying problem-solving strategies across a range of areas • testing assumptions, taking into account the context of data and circumstances • resolving customer concerns in relation to complex project issues
Initiative and enterprise that contribute to innovative outcomes	• adapting to new situations • developing a strategic, creative and long-term vision • being creative • identifying opportunities not obvious to others • translating ideas into action • generating a range of options • initiating innovative solutions
Planning and organising that contribute to long-term and short-term strategic planning	• managing time and priorities – setting timelines, coordinating tasks for self and with others • being resourceful • taking initiative and making decisions • adapting resource allocations to cope with contingencies • establishing clear project goals and deliverables • allocating people and other resources to tasks • planning the use of resources, including time management • participating in continuous improvement and planning processes • developing a vision and a proactive plan to accompany it

Skill	Facets
Planning and organising cont/d	• predicting – weighing up risk, evaluating alternatives and applying evaluation criteria • collecting, analysing and organising information • understanding basic business systems and their relationships
Self-management that contributes to employee satisfaction and growth	• having a personal vision and goals • evaluating and monitoring own performance • having knowledge and confidence in own ideas and visions • articulating own ideas and visions • taking responsibility
Learning that contributes to ongoing improvement and expansion in employee and company operations and outcomes	• managing own learning • contributing to the learning community at the workplace • using a range of mediums to learn – mentoring, peer support and networking, IT and courses • applying learning to technical issues (eg learning about products) and people issues (eg interpersonal and cultural aspects of work) • having enthusiasm for ongoing learning • being willing to learn in any setting – on and off the job • being open to new ideas and techniques • being prepared to invest time and effort in learning new skills • acknowledging the need to learn in order to accommodate change
Technology that contributes to the effective carrying out of tasks	• having a range of basic IT skills • applying IT as a management tool • using IT to organise data • being willing to learn new IT skills • having the OHS knowledge to apply technology • having the appropriate physical capacity.

There is an *Employability Skills Summary* for each AQF VET qualification level available in the Electrotechnology Training Package (UEE07). These summaries capture the key aspects or facets of the employability skills that are important to the job roles covered by the qualification. Summaries are designed to assist trainers and assessors to identify and include important industry application of employability skills in learning and assessment strategies. The Employability Skills Summaries for the qualifications available in the Framework are included in Section 15 of this document.

Employability skills are essential features of each of the qualifications available in the Framework and therefore consideration must be given to the ways in which they can be addressed when designing learning activities and assessment instruments.

The following is important information for trainers and assessors about Employability Skills Summaries:

- Employability Skills Summaries provide examples of how each skill is applicable to the job roles covered by the qualification.
- Employability Skills Summaries contain general information which is further explained as measurable outcomes of performance in the units of competency in each qualification.
- The details in Employability Skills Summaries vary according to the range of job roles covered by the qualification in question.
- Employability Skills Summaries are not exhaustive lists of qualification requirements or checklists of performance (which are separate assessment tools that should be designed by trainers and assessors after analysis at the unit level).
- Employability Skills Summaries contain information that may also assist in building learners' understanding of industry and workplace expectations.

13.3 Articulation to further training

Students achieving units of competency in this Framework can apply to have those units recognised in other endorsed Training Package qualifications.

Students and teachers should investigate the qualifications within the Electrotechnology Training Package (UEE07) to identify possible training pathways. In some instances these may include higher-level courses at TAFE NSW or other RTOs which may provide for advanced standing in related university courses.

Students seeking to gain credit towards AQF VET qualifications in other industries may use the qualifications gained in Electrotechnology as evidence of competency for related units of competency in any national Training Package.

Further information on requirements and arrangements for post-school apprenticeships and traineeships in the electrotechnology industry is available from the NSW Department of Education and Training State Training Centres and Australian Apprenticeship Centres.

14 AQF VET Qualifications

The various titles of AQF VET qualifications reflect levels of performance and degrees of responsibility in a workplace context. The level of a qualification thus provides an indication of the standard of achievement expected, which is comparable across industries and provides a context for assessment.

Industry curriculum frameworks relate to Certificates I to III. Brief descriptions of Certificates I, II and III, adapted from the *Australian Qualifications Framework Implementation Handbook,*[3] are provided below.

Certificate I

Breadth, depth and complexity of knowledge and skills would prepare a person to perform a defined range of activities most of which may be routine and predictable.

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.

An individual demonstrating competencies at this level would be able 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

Breadth, depth and complexity of knowledge and skills would prepare a person to perform in a range of varied activities or knowledge applications where there is a clearly defined range of contexts in which the choice of actions required is usually clear and there is limited complexity in the range of options to be applied.

Performance of a prescribed range of functions involving known routines and procedures and some accountability for the quality of outcomes.

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.

An individual demonstrating competencies at this level would be able 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.

[3] Australian Qualifications Framework (AQF) Advisory Board, 2007, *Australian Qualifications Framework Implementation Handbook*, Fourth Edition, Carlton, VIC.

Certificate III

Breadth, depth and complexity of knowledge and competencies would cover selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specific problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.

Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the selection of equipment, services or contingency measures and within known time constraints.

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

An individual demonstrating these competencies would be able 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.

AQF VET Statements of Attainment and Certificates are ONLY issued on the basis of successful achievement of units of competency as determined by a qualified assessor.

15 Minimum Requirements for AQF VET Qualifications

The following pages outline the qualification packaging rules for the AQF VET qualifications available in this Framework. This information is reproduced directly from the **Electrotechnology Training Package (UEE07)**. It is included so that the minimum requirements for achieving the industry qualifications are clear. Students who meet these requirements will be eligible for the relevant AQF VET Certificate, whether or not they have met the additional requirements of the HSC course.

Please note: **Only the shaded units of competency are available in the Electrotechnology Curriculum Framework. HSC course requirements are outlined in Sections 8 and 17.**

UEE10107 Certificate I in ElectroComms Skills

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.

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	
UEENEED001B	Use basic computer applications relevant to a workplace
UEENEEE001B	Apply OHS practices in the workplace
UEENEEE040B	Identify and select components/accessories/materials for electrotechnology work activities
UEENEEE048B	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	
UEENEEC001B	Maintain documentation
UEENEEC002B	Source and purchase materials/parts for installation or service jobs
UEENEEC008B	Receive and store materials and equipment for electrotechnology work
UEENEEC010B	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 3 as specified.

[see Schedule of Electives – 2, pp 60–63 of this document]

Note: 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.

Employability skills summary for all qualifications at AQF Level 1

The following table contains a summary of the Employability Skills required by the Electrotechnology Industry for all UEE07 Electrotechnology Training Package qualifications at AQF level 1.

AQF Code	Certificate I Qualifications
UEE10107	Certificate I in ElectroComms Skills

The Employability Skills facets described here are broad industry requirements that may vary depending on qualification packaging rules and options.

Communication
Collect, organise and understand information related to the work task and it's relevant safety procedures
Access, read and comprehend safety instructions and procedures
Share information via speech and in writing
Prepare time sheets
Teamwork
Work with others to generate and review ideas
Work effectively as an individual and as a member of a team
Relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
Contribute to a positive culture of compliance within an organisation
Develop and maintain networks for the implementation and maintenance of industry knowledge, standards and requirements
Provide feedback
Problem Solving
Apply lateral thinking to generate solutions in response to work problems
Identify, assess and prioritise work risks to maintain efficiency, quality, productivity and workplace safety at all times
Initiative & Enterprise
Identify and comply with all requirements and standards for work in the Electrotechnology industry
Initiate and follow through on the implementation of industry standards in the workplace
Planning & Organising
Plan and organise activities including the maintenance and layout of own worksite and obtain equipment and materials to avoid work flow interruptions or wastage
Plan activities to enable operational skills and knowledge to be gained and maintained
Identify related industry compliance requirements
Maintain relevant industry and work records
Establish clear goals and deliverables
Collect, analyse and organise work task information
Apply time management prioritising techniques

Self Management
Plan own work within given task parameters
Set, monitor and satisfy personal work goals
Accept responsibility for given tasks
Apply systematic and effective time management
Learning
Satisfy the competency requirements for the job
Maintain current knowledge of tools, devices, instruments, materials, work practices and systems
Seek learning opportunities
Take control of and manage own learning
Adopt a open approach to new ideas and techniques
Commit to and promote a culture of continuous learning
Set realistic learning goals for self development
Technology
Use workplace technology related to particular work tasks including tools, devices, instruments and materials
Attain and maintain IT skills relevant to the Electrotechnology industry
Be willing to gain knowledge and skills relevant to new and emerging technologies

The Employability Skills described above are representative of the Electrotechnology Industry in general and may not reflect enterprise-specific requirements or job roles.

Learning and assessment strategies for each qualification should be based on the requirements of the units of competency comprising the qualification and the Assessment Guidelines [of UEE07 Training Package].

Please note: **Only the shaded units of competency are available in the Electrotechnology Curriculum Framework. HSC course requirements are outlined in Sections 8 and 17.**

UEE20507 Certificate II in Computer Assembly and Repair

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	
UEENEED002B	Assemble, set up and test personal computers
UEENEED004B	Use engineering applications software
UEENEED043B	Install and configure operating systems and software
UEENEED046B	Set up and configure basic local area network
UEENEEE001B	Apply OHS practices in the workplace
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003B	Solve problems in extra-low voltage single path circuits
UEENEEE032B	Document occupational hazards and risks in computer systems
UEENEEE038B	Participate in development and follow a personal competency development plan

Stream Core Competency Standard Units At least 1 of the following competency standard units to be achieved	
UEENEEC001B	Maintain documentation
UEENEEC002B	Source and purchase material/parts for installation or service jobs
UEENEEC008B	Receive and store materials and equipment for electrotechnology work
UEENEEC010B	Deliver a service to customers
UEENEED001B	Use basic computer applications relevant to a workplace
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus
UEENEEK042A	Participate in environmentally sustainable work practices

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.

[see Schedule of Electives – 2, pp 60–63 of this document]

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.

Please note: **Only the shaded units of competency are available in the Electrotechnology Curriculum Framework. HSC course requirements are outlined in Sections 8 and 17.**

UEE21707 Certificate II in Technical Support

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	
UEENEEE001B	Apply OHS practices in the workplace
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003B	Solve problems in extra-low voltage single path circuits
UEENEEE004B	Solve problems in multiple path d.c. circuits
UEENEEE005B	Fix and secure equipment
UEENEEE007B	Use drawings, diagrams, schedules and manuals
UEENEEE022B	Carry out preparatory electrotechnology work activities
UEENEEE037B	Document occupational hazards and risks in electrotechnology
UEENEEE038B	Participate in development and follow a personal competency development plan
UEENEEG011B	Carry out basic repairs to electrical apparatus

Stream Core Competency Standard Units At least 1 of the following competency standard units to be achieved	
UEENEEC001B	Maintain documentation
UEENEEC002B	Source and purchase materials/parts for installation or service jobs
UEENEEC008B	Receive and store materials and equipment for electrotechnology work
UEENEEC010B	Deliver a service to customers
UEENEEE020B	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.

[see Schedule of Electives – 2, pp 60–63 of this document]

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.

Please note: **Only the shaded units of competency are available in the Electrotechnology Curriculum Framework. HSC course requirements are outlined in Sections 8 and 17.**

UEE22007 Certificate II in Electrotechnology (Career Start)

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	
UEENEEE001B	Apply OHS practices in the workplace
UEENEEE003B	Solve problems in extra-low voltage single path circuits
UEENEEE004B	Solve problems in multiple path d.c. circuits
UEENEEE040B	Identify and select components/accessories/materials for electrotechnology work activities
UEENEEE041B	Use routine equipment/plant/technologies in an electrotechnology environment
UEENEEE048B	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	
UEENEEC001B	Maintain documentation
UEENEEC010B	Deliver a service to customers
UEENEED001B	Use basic computer applications relevant to a workplace
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus
UEENEEK042A	Participate in environmentally sustainable work practices

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 7 as specified.

[see Schedule of Electives – 2, pp 60–63 of this document]

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.

Please note:	**Only the shaded units of competency are available in the Electrotechnology Curriculum Framework. HSC course requirements are outlined in Sections 8 and 17.**

UEE22107 Certificate II in Sustainable Energy (Career Start)

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	
UEENEEE001B	Apply OHS practices in the workplace
UEENEEE003B	Solve problems in extra-low voltage single path circuits
UEENEEE004B	Solve problems in multiple path d.c. circuits
UEENEEK012B	Provide basic sustainable energy solutions for energy reduction in domestic premises
UEENEEK013B	Apply sustainable energy practice in daily activities
UEENEEK014B	Promote sustainable energy practice in the community

Stream Core Competency Standard Units At least 1 of the following competency standard units to be achieved	
UEENEEC001B	Maintain documentation
UEENEEC010B	Deliver a service to customers
UEENEED001B	Use basic computer applications relevant to a workplace
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus
UEENEEK042A	Participate in environmentally sustainable work practices

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.

[see Schedule of Electives – 2, pp 60–63 of this document]

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.

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

UEENEEE045B	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

UEENEED012B	Support computer hardware and software
UEENEEE043B	Produce routine tools/devices for carrying out electrotechnology work activities
UEENEEE044B	Apply technologies and concepts to electrotechnology work activities
UEENEEE046B	Identify affects of energy on machinery and materials in an electrotechnology environment
UEENEEE047B	Identify building techniques, methods and materials in electrotechnology work activities
UEENEEE049B	Contribute to the operation of support plant and equipment used in electricity supply
UEENEEE050B	Undertake computations in an electrotechnology environment
UEENEEF002B	Lay and connect cables for multiple access to telecommunication services
UEENEEG052B	Rewind single phase induction machines
UEENEEH003B	Carry out repairs to business equipment
UEENEEH006B	Assemble and set up fixed audio/video components and systems in buildings and premises
UEENEEK017B	Maintain and repair facilities associated with remote area essential services operation
UEENEEK018B	Maintain operation of remote area water facilities
UEENEEK020B	Maintain operation of remote area power plant

Strand 5

Schedule 2 – Strand 5 Electives

UEENEEH069B	Solve problems in electronic circuits
UEENEEK013B	Apply sustainable energy practice in daily activities

Strand 4

Schedule 2 – Strand 4 Electives

UEENEED002B	Assemble, set up and test personal computers
UEENEEE023B	Solve basic problems in electronic and digital equipment
UEENEEE042B	Produce routine products for carrying out electrotechnology work activities
UEENEEG001B	Solve problems in electromagnetic circuits
UEENEEH050B	Assemble and set up basic wired and wireless security systems
UEENEEJ062B	Recover, pressure and leak test, evacuate and charge refrigerants appliance
UEENEEK019B	Maintain operation of remote area waste water facilities
UEENEEK023B	Carry out basic repairs to renewable energy apparatus by replacement of components
UEENEEK025B	Solve basic problems in photovoltaic energy apparatus

Strand 3

Schedule 2 – Strand 3 Electives

UEENEEE022B	Carry out preparatory electrotechnology work activities
UEENEEE030B	Provide solutions to and report on routine electrotechnology problems
UEENEEE040B	Identify and select components/accessories/materials for electrotechnology work activities
UEENEEE041B	Use routine equipment/plant/technologies in an electrotechnology environment
UEENEEE051B	Transport apparatus and materials
UEENEEF015B	Assemble and connect communication frames and cabinets
UEENEEH008B	Assemble and erect reception antennae and signal distribution equipment
UEENEEH009B	Set up and test gaming/games equipment
UEENEEH028B	Install microwave and antennae and waveguides
UEENEEH062B	Verify compliance and functionality of fire protection installations
One unit from an endorsed TP	One competency standard unit may be imported from any other National Quality Council (NQC) endorsed Training Package and be aligned to a relevant AQF
UEENEEJ005B	Position, assemble and start up split air conditioning systems
UEENEEJ051B	Service small appliances and power tools
UEENEEJ072B	Recover, pressure and leak test, evacuate and charge refrigerants – split air-conditioning systems
UEENEEK011B	Assemble and connect remote area power supplies

Strand 2

Schedule 2 – Strand 2 Electives

UEENEEA001B	Assemble electronic apparatus
UEENEEA003B	Set up and check electronic component placement machines
UEENEEA004B	Rework electronic sub assemblies
UEENEEA006B	Apply lead-free soldering techniques
UEENEEB001B	Operate and maintain an amateur radio communication station
UEENEED004B	Use engineering applications software
UEENEED043B	Install and configure a computer operating system and software
UEENEED046B	Set up and configure basic local area network
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003B	Solve problems in extra-low voltage single path circuits
UEENEEE004B	Solve problems in multiple path d.c. circuits
UEENEEE007B	Use drawings, diagrams schedules and manuals
UEENEEE008B	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE019B	Solve problems in multiple path a.c circuits
UEENEEE048B	Carry out routine work activities in an electrotechnology environment
UEENEEF006B	Solve problems in data and voice communications circuits
UEENEEF007B	Set up wireless capabilities of communications and data storage devices
UEENEEG011B	Carry out basic repairs to electrical apparatus
UEENEEG050B	Wind coils
UEENEEG051B	Place and connect coils
UEENEEH001B	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies
UEENEEH002B	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH004B	Set up and test audio/video equipment
UEENEEH061B	Position and terminate fire detection and warning system apparatus
UEENEEJ002B	Prepare refrigeration tubing and fittings
UEENEEJ003B	Determine the basic operating conditions of vapour compression systems
UEENEEJ004B	Determine the basic operating conditions of air conditioning systems
UEENEEK003B	Conduct periodic maintenance of remote area power supply (RAPS) battery banks
UEENEEK004B	Conduct periodic maintenance of remote area power supply (RAPS) generator sets
UEENEEK005B	Conduct periodic maintenance of remote area power supply (RAPS) photovoltaic arrays
UEENEEK006B	Conduct periodic maintenance of remote area power supply (RAPS) wind generators
UEENEEK007B	Conduct audits in the demand side use of remote area power supplies
UEENEEK008B	Plan periodic maintenance schedules of remote area power supplies

Schedule 2 – Strand 2 Electives cont/d

UEENEEK012B	Provide basic sustainable energy solutions for energy reduction in domestic premises
UEENEEK014B	Promote sustainable energy practice in the community
UEENEEP002B	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply
UEENEEP006B	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply
UEENEEP009B	Locate and rectify faults in electrical low voltage appliances up to 250V following prescribed procedures
UEOPS234A	Perform Routine Oxyacetylene (Fuel Gas) Welding
UEPOPS235A	Perform Routine Manual Arc Welding
UEPOPS236A	Perform Manual Heating, Thermal Cutting and Gouging

Strand 1

Schedule 2 – Strand 1 Electives

UEENEEA002B	Select electronic components
UEENEEA005B	Conduct functional and quality tests on assembled electronic apparatus
UEENEED005B	Enter and verify operating instructions in microprocessor equipped devices
UEENEEE001B	Apply OHS practices in the workplace
UEENEEE005B	Fix and secure equipment
UEENEEE032B	Document occupational hazards and risks in computer systems
UEENEEE033B	Document occupational hazards and risks in electrical work
UEENEEE034B	Document occupational hazards and risks in electronics
UEENEEE035B	Document occupational hazards and risks in instrumentation
UEENEEE036B	Document occupational hazards and risks in refrigeration and air-conditioning
UEENEEE037B	Document occupational hazards and risks in electrotechnology
UEENEEF001B	Lay and connect cabling for direct access to telecommunication services
UEENEEJ052B	Carry out repairs to appliance refrigeration systems
UEENEEK001B	Maintain safety and tidiness of remote area power supply (RAPS) systems
UEENEEK002B	Work safely with remote area power supply (RAPS) systems
UEENEEK024B	Assemble and set up photovoltaic apparatus in domestic dwellings
UEENEEM001B	Report on the integrity of explosion-protected equipment in hazardous areas
UEENEEP003B	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply
UEENEEP008B	Conduct inservice safety testing of electrical cord assemblies and cord connected equipment.

Employability skills summary for all qualifications at AQF Level 2

The following table contains a summary of the Employability Skills required by the Electrotechnology Industry for all UEE07 Electrotechnology Training Package qualifications at AQF level 2 including:

AQF Code	Certificate II Qualifications
UEE20507	Certificate II in Computer Assembly and Repair
UEE21707	Certificate II in Technical Support
UEE22007	Certificate II in Electrotechnology (Career Start)
UEE22107	Certificate II in Sustainable Energy (Career Start)

The Employability Skills facets described here are broad industry requirements that may vary depending on qualification packaging rules and options.

Communication
Collect, organise and understand information related to the work task and it's relevant safety procedures
Communicate ideas and information to enable confirmation of work requirement and specifications
Co-operate with other workers/customers and report outcomes and/or any problems
Access, read and comprehend safety instructions and procedures
Share information via speech and in writing
Prepare time sheets
Teamwork
Work with others to generate and review ideas
Work effectively as an individual and as a member of a team
Work with others and in a team to identify work needs and review ideas against those needs
Relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
Contribute to a positive culture of compliance within an organisation
Develop and maintain networks for the implementation and maintenance of industry knowledge, standards and requirements
Provide feedback
Problem Solving
Apply lateral thinking ideas to generate solutions in response to work problems
Anticipate or clarify problems to avoid interruptions to work flows and processes
Identify, assess and prioritise work risks to maintain efficiency, quality, productivity and work place safety at all times
Initiative & Enterprise
Identify and comply with all requirements and standards for work in the Electrotechnology industry
Apply enterprise best practice and quality systems
Interact effectively with both internal and external industry stakeholders
Initiate and follow through on the implementation of industry standards in the workplace

Planning & Organising
Plan and organise activities including the maintenance and layout of own worksite and obtain equipment and materials to avoid work flow interruptions or wastage
Identify related industry compliance requirements
Maintain relevant industry and work records
Establish clear implementation goals and deliverables
Collect, analyse and organise work task information
Apply time management prioritising techniques
Self Management
Plan own work within given task parameters
Set, monitor and satisfy personal work goals
Accept responsibility for given tasks
Apply systematic and effective time management
Learning
Satisfy the competency requirements for the job
Maintain current knowledge of tools, devices, instruments, materials, work practices and systems
Seek learning opportunities
Take control and manage own learning
Adopt a open approach to new ideas and techniques
Commit to and promote a culture of continuous learning
Set realistic learning goals for self development
Monitor and respond to learning process achievements
Technology
Use workplace technology related to the particular work tasks including tools, devices, instruments and materials
Attain and maintain required technical accreditation/authority under the industry standards
Attain and maintain IT skills relevant to the Electrotechnology industry
Be willing to gain knowledge and skills relevant to new and emerging technologies

The Employability Skills described above are representative of the Electrotechnology Industry in general and may not reflect enterprise-specific requirements or job roles.

Learning and assessment strategies for each qualification should be based on the requirements of the units of competency comprising the qualification and the Assessment Guidelines [of UEE07 Training Package].

Please note: **Only the shaded units of competency are available in the Electrotechnology Curriculum Framework. HSC course requirements are outlined in Sections 8 and 17.**

UEE30807 Certificate III in Electrotechnology Electrician

Scope

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain electrical systems and equipment in buildings 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	
UEENEEC020B	Participate in electrical work and competency development activities
UEENEEE001B	Apply OHS practices in the workplace
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003B	Solve problems in extra-low voltage single path circuits
UEENEEE004B	Solve problems in multiple path d.c. circuits
UEENEEE005B	Fix and secure equipment
UEENEEE007B	Use drawings, diagrams, schedules and manuals
UEENEEE008B	Lay wiring and terminate accessories for extra-low voltage circuits
UEENEEE033B	Document occupational hazards and risks in electrical work
UEENEEG001B	Solve problems in electromagnetic circuits
UEENEEG002B	Solve problems in single and three phase low voltage circuits
UEENEEG003B	Install wiring and accessories for extra-low voltage circuits
UEENEEG004B	Install low voltage electrical apparatus and associated equipment
UEENEEG005B	Verify compliance and functionality of general electrical installations
UEENEEG007B	Select and arrange equipment for general electrical installations
UEENEEG008B	Find and repair faults in electrical apparatus and circuits
UEENEEG009B	Develop and connect control circuits

Stream Core Competency Standard Units At least 2 of the following competency standard units to be achieved	
UEENEEC001B	Maintain documentation
UEENEEC002B	Source and purchase material/parts for installation or service jobs
UEENEEC003B	Provide quotations for installation or service jobs
UEENEEC010B	Deliver a service to customers
UEENEED001B	Use basic computer applications relevant to a workplace
UEENEEE009B	Comply with scheduled and preventative maintenance program processes
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus
UEENEEK042A	Participate in environmentally sustainable work practices

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.

[see Schedule of Electives – 3, pp 70–76 of this document]

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.

Please note: **Only the shaded units of competency are available in the Electrotechnology Curriculum Framework. HSC course requirements are outlined in Sections 8 and 17.**

UEE31307 Certificate III in Refrigeration and Air-Conditioning

Scope

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain electrical systems and equipment ion 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	
UEENEEC025B	Participate in refrigeration and air conditioning work and competency development activities
UEENEEE001B	Apply OHS practices in the workplace
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003B	Solve problems in extra-low voltage single path circuits
UEENEEE005B	Fix and secure equipment
UEENEEE007B	Use drawings, diagrams, schedules and manuals
UEENEEE036B	Document occupational hazards and risks in refrigeration and air-conditioning
UEENEEJ002B	Prepare refrigeration tubing and fittings
UEENEEJ003B	Determine the basic operating conditions of vapour compression systems
UEENEEJ004B	Determine the basic operating conditions of air conditioning systems
UEENEEJ006B	Install pipework for refrigeration and air conditioning systems
UEENEEJ007B	Install refrigeration and air conditioning systems, major components and associated equipment
UEENEEJ008B	Recover, pressure and leak test, evacuate and charge refrigerants
UEENEEJ009B	Verify compliance and functionality of refrigeration and air conditioning installations
UEENEEJ010B	Select refrigeration pipe/tube, accessories and associated controls

Core Competency Standard Units cont/d

UEENEEJ011B	Diagnose and rectify faults in refrigeration and air conditioning systems and components
UEENEEJ013B	Commission refrigeration and air conditioning systems
UEENEEJ053B	Find and rectify faults in appliance motors and associated controls
UEENEEJ070B	Diagnose and rectify faults in refrigeration and air conditioning control systems
UEENEEP001B	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply
UEENEEP002B	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply
UEENEEP003B	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply
UEENEEP007B	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

UEENEEC001B	Maintain documentation
UEENEEC002B	Source and purchase material/parts for installation or service jobs
UEENEEC003B	Provide quotations for installation or service jobs
UEENEEC010B	Deliver a service to customers
UEENEED001B	Use basic computer applications relevant to a workplace
UEENEEE009B	Comply with scheduled and preventative maintenance program processes
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus
UEENEEK042A	Participate in environmentally sustainable work practices

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.

[see Schedule of Electives – 3, pp 70–76 of this document]

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.

Schedule of Electives – 3

Competency standard units have been out 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

UEENEEA010B	Assemble, mount and connect switchgear and controlgear
UEENEED012B	Support computer hardware and software
UEENEEF002B	Lay and connect cables for multiple access to telecommunication services
UEENEEF010B	Select and arrange equipment for local area networks
UEENEEG007B	Select and arrange equipment for general electrical installations
UEENEEG015B	Find and rectify faults in energy supply network equipment
UEENEEG052B	Rewind single phase induction machines
UEENEEG053B	Rewind three phase induction machines rated for low voltage
UEENEEG054B	Rewind direct current machines rated for low voltage
UEENEEH003B	Carry out routine repairs to business equipment
UEENEEH006B	Assemble and set up fixed audio/video components and systems in buildings and premises
UEENEEH010B	Install commercial audio/video system components
UEENEEH017B	Carry out repairs of predictable faults in audio and video replay/recording apparatus
UEENEEH019B	Carry out repairs of predictable faults in television receivers
UEENEEH021B	Find and rectify faults in high volume office equipment
UEENEEH071B	Find and rectify faults in television receivers
UEENEEH073B	Find and rectify faults in professional audio reproduction components
UEENEEH074B	Find and rectify faults in audio/video recording equipment
UEENEEI006B	Solve problems in process controllers, transmitters and converters
UEENEEI009B	Set up process measuring and control instruments
UEENEEJ010B	Select refrigerant pipe/tube, accessories and associated controls
UEENEEJ053B	Find and rectify faults in appliance motors and associated controls

Schedule 3 – Strand 6 Electives cont/d

UEENEEK017B	Maintain and repair facilities associated with remote area essential services operation
UEENEEK018B	Maintain operation of remote are water facilities
UEENEEK020B	Maintain operation of remote area power plant

Strand 5

Schedule 3 – Strand 5 Electives

UEENEEH051B	Install large wired and wireless security systems
UEENEEH069B	Solve problems in electronic circuits

Strand 4

Schedule 3 – Strand 4 Electives

UEENEED002B	Assemble, set up and test personal computers
UEENEEG016B	Diagnose and rectify faults in lifts systems
UEENEEG026B	Install and maintain field power and distribution systems with a LV demand up to 200 A per phase
UEENEEH012B	Troubleshoot digital subsystems
UEENEEH013B	Troubleshoot amplifiers
UEENEEH014B	Troubleshoot frequency dependent circuits
UEENEEH020B	Find and repair faults in gaming and games equipment
UEENEEH050B	Assemble and set up basic wired and wireless security systems
UEENEEH072B	Find and repair faults in communication systems
UEENEEI013B	Select equipment for process control systems
UEENEEJ057B	Service electric heating appliances
UEENEEK019B	Maintain operation of remote area waste water facilities
UEENEEK023B	Carry out basic repairs to renewable energy apparatus by replacement of components
UEENEEK025B	Solve basic problems in photovoltaic energy apparatus
UEENEEP001B	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply

Strand 3

Schedule 3 – Strand 3 Electives

UEENEEA012B	Make up and assemble bus bars
UEENEEA013B	Assemble and wire control panels
UEENEED007B	Develop, enter and verify programs for programmable logic controllers using ladder instruction set
UEENEED031B	Develop and validate basic integrated systems
UEENEEF008B	Select and arrange equipment for wireless networks

Schedule 3 – Strand 3 Electives cont/d

UEENEEF009B	Install and connect voice and data communications equipment
UEENEEF011B	Test, report and rectify faults in voice and data installations
UEENEEG010B	Find and repair faults in d.c. electrical apparatus and circuits
UEENEEG013B	Install and maintain emergency systems
UEENEEG018B	Maintain operation of electrical mining equipment
UEENEEG019B	Maintain the operation of electrical marine equipment
UEENEEG020B	Select and arrange equipment for special electrical installations
UEENEEG029B	Overhaul and repair switchgear/controlgear.
UEENEEG055B	Rewind three phase induction machines rated for high voltage to 3.3kV
UEENEEG056B	Rewind three phase induction machines rated for high voltage above 3.3kV
UEENEEG058B	Conduct electrical tests on high voltage electrical machines
UEENEEG064B	Repair mechanical components of electrical machines
UEENEEH008B	Assemble and erect reception antennae and signal distribution equipment
UEENEEH009B	Set up and test gaming/games equipment
UEENEEH015B	Develop software solutions un microcontroller based systems
UEENEEH022B	Find and repair faults in remote control apparatus
UEENEEH027B	Commission commercial radio frequency (RF) transmission and reception systems
UEENEEH028B	Install microwave and antennae and waveguides
UEENEEH054B	Program and commission commercial security alarm systems
UEENEEH055B	Program and commission commercial security access control systems
UEENEEH056B	Program and commission commercial security closed circuit television (CCTV) systems
One unit from endorsed TP	One competency standard unit may be imported from any other National Quality Council (NQC) endorsed Training Package and be aligned to a relevant AQF
UEENEEI014B	Find and rectify faults in process control systems
UEENEEJ005B	Position, assemble and start up split air conditioning systems
UEENEEJ051B	Service small appliances and power tools
UEENEEJ054B	Find and rectify faults in appliance control devices and systems
UEENEEJ055B	Service refrigerated appliances
UEENEEJ072B	Recover, pressure and leak test, evacuate and charge refrigerants – split air conditioning systems
UEENEEM004B	Install explosion-protected equipment and wiring systems
UEENEEM006B	Maintain equipment in hazardous areas
UEENEEM007B	Overhaul and repair explosion-protected equipment
UEENEEP004B	Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply
UEENEEP005B	Disconnect and reconnect 3.3kV electric propulsion components of self-propelled earth moving vehicles

Strand 2

Schedule 3 – Strand 2 Electives

UEENEEA001B	Assemble electronic apparatus
UEENEEA003B	Set up and check electronic component placement machines
UEENEEA004B	Rework electronic sub assemblies
UEENEEA006B	Apply lead-free soldering techniques
UEENEED004B	Use engineering applications software
UEENEED029B	Develop basic web pages for engineering applications
UEENEED030B	Select, install, configure and test multimedia devices
UEENEED043B	Install and configure a computer operating system and software
UEENEED046B	Set up and configure basic local area network
UEENEED053B	Set up and test biometric devices
UEENEEE019B	Solve problems in multiple path a.c circuits
UEENEEE021B	Plan an integrated cabling system
UEENEEF003B	Install and maintain cabling for telecommunication services in lifts
UEENEEF004B	Install and modify performance data communication structured cabling
UEENEEF005B	Install and modify performance data communication optical fibre cabling
UEENEEF007B	Set up wireless capabilities of communications and data storage devices
UEENEEF012B	Install aerial communication cables
UEENEEF013B	Install below ground communication cables
UEENEEF014B	Set up and configure basic data communications systems
UEENEEG017B	Install electrical power and control equipment for rail network signalling
UEENEEG021B	Verify compliance and functionality of special electrical installations
UEENEEG025B	Plan electrical installations with a LV demand up to 400A per phase
UEENEEG028B	Plan switchboard and control panel layouts
UEENEEG034B	Perform high voltage field switching to a given schedule
UEENEEG057B	Conduct electrical tests on low voltage electrical machines
UEENEEG059B	Conduct mechanical tests of electrical machines
UEENEEG062B	Set up and place electrical apparatus and associated circuits into service
UEENEEG065B	Maintain and service traction lifts
UEENEEG066B	Installation and maintenance of escalators, moving walks and tread ways
UEENEEG067B	Align and install lift equipment
UEENEEH002B	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH004B	Set up and test audio/video equipment
UEENEEH005B	Verify compliance and functionality of custom electronic installations
UEENEEH007B	Carry out repairs of predictable faults in general electronic apparatus
UEENEEH011B	Troubleshoot d.c. power supplies with single phase input
UEENEEH016B	Find and repair faults in the microwave amplifier sections of electronic apparatus

Schedule 3 – Strand 2 Electives cont/d

UEENEEH018B	Find and repair faults in electronic apparatus
UEENEEH023B	Find and repair faults in microwave heating apparatus
UEENEEH024B	Carry out repairs of predictable faults in audio components
UEENEEH038B	Find and repair faults in complex power supplies
UEENEEH039B	Troubleshoot basic amplifier
UEENEEH042B	Troubleshoot oscillators
UEENEEH046B	Solve fundamental problems in electronic communications systems
UEENEEH052B	Enter instructions and test basic wired and wireless security systems
UEENEEH063B	Enter and verify programs in preparation for commissioning fire protection systems
UEENEEH064B	Commission commercial fire protection systems
UEENEEH065B	Find and repair faults in fire protection systems
UEENEEH066B	Fault find microcontroller based hardware
UEENEEH070B	Terminate and connect components, con doctors, wiring and cables for electronic circuits
UEENEEH087B	Solve problems in musical equipment circuits
UEENEEI001B	Install and set up transducers and sensing devices
UEENEEI002B	Solve problems in pressure measurement systems
UEENEEI003B	Solve problems in density/level measurement systems
UEENEEI004B	Solve problems in flow measurement systems
UEENEEI005B	Solve problems in temperature measurement systems
UEENEEI007B	Install process instrumentation and control cabling and tubing
UEENEEI008B	Install process control apparatus and associated equipment
UEENEEI010B	Set up and adjust process control loops
UEENEEI011B	Find and rectify faults in process control valve and associated equipment
UEENEEI012B	Verify compliance and functionality or process control installations
UEENEEI017B	Calibrate an test measuring instruments
UEENEEJ002B	Prepare refrigeration tubing and fittings
UEENEEJ003B	Determine the basic operating conditions of vapour compression systems
UEENEEJ004B	Determine the basic operating conditions of air conditioning systems
UEENEEJ014B	Solve problems in hydronic systems
UEENEEJ015B	Solve problems in beverage dispensers
UEENEEJ016B	Solve problems in transport refrigeration systems
UEENEEJ018B	Solve problems in post mix refrigeration systems
UEENEEJ020B	Solve problems in industrial refrigeration systems
UEENEEJ056B	Service clothes washers and dryers
UEENEEJ058B	Service dish washing machines
UEENEEJ059B	Service gas appliances

Schedule 3 – Strand 2 Electives cont/d

UEENEEJ060B	Service room air conditioners
UEENEEJ061B	Verify compliance and functionality of appliances
UEENEEJ073B	Service microwave ovens
UEENEEK007B	Conduct audits in the demand side use of remote area power supplies
UEENEEK008B	Plan periodic maintenance schedules of remote area power supplies
UEENEEK026B	Install and set up grid connected photovoltaic power systems
UEENEEM009B	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
ICTTC056C	Install telecomm network equipment
UETTDRIS04B	Perform high voltage switching operation to a given schedule

Strand 1

Schedule 3 – Strand 1 Electives

UEENEEA002B	Select electronic components
UEENEEA005B	Conduct functional and quality tests on assembled electronic apparatus
UEENEED005B	Enter and verify operating instructions in microcompressor equipped devices
UEENEEE005B	Fix and secure equipment
UEENEEF001B	Lay and connect cabling for direct access to telecommunication services
UEENEEH001B	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies
UEENEEJ017B	Solve problems in ultra-low temperature refrigeration systems
UEENEEJ019B	Solve problems in ice making systems
UEENEEJ052B	Carry out repairs to appliance refrigeration systems
UEENEEJ066B	Solve problems in diary refrigeration systems
UEENEEJ067B	Solve problems in central air conditioning systems
UEENEEJ068B	Maintain microbial control of air and water systems
UEENEEJ071B	Solve problems in refrigerated beverage vending machines
UEENEEK009B	Attend to breakdowns in remote area power supplies
UEENEEK024B	Assemble and set up photovoltaic apparatus in domestic dwellings
UEENEEK037B	Install and set up micro-hydro systems
UEENEEK043A	Install small wind energy conversion systems for stand-alone applications
MCMS200A	Apply competitive manufacturing practices
MCMT220A	Apply quick changeover procedures
MCMT221A	Apply Just In Time (JIT) procedures
MCMT240A	Apply 5S procedures in a manufacturing environment

Schedule 3 – Strand 1 Electives cont/d

MCMT280A	Undertake root cause analysis
MCMT281A	Contribute to the application of a proactive maintenance strategy
UEENEEM002B	Attend to breakdowns in hazardous areas
UEENEEM003B	Use and maintain the integrity of portable gas detection devices
UEENEEM005B	Install and maintain integrity of fixed gas detection equipment
UEENEEM010B	Conduct close inspection of existing hazardous areas installations
UEENEEN002B	Assemble and wire internal electrical signalling equipment
UEENEEN003B	Install and maintain track circuit leads and bonds
UEENEEN004B	Perform cable tests
UEENEEN005B	Install and maintain signalling power supplies
UEENEEN008B	Maintain on-site power operated point-activating devices
UEENEEN009B	Maintain track circuits equipment
UEENEEN011B	Install and maintain power operated signalling equipment
UEENEEP007B	Locate and rectify faults in electrical low voltage equipment following prescribed procedures

Employability skills summary for all qualifications at AQF Level 3

The following table contains a summary of the Employability Skills required by the Electrotechnology Industry for all UEE07 Electrotechnology Training Package qualifications at AQF level 3, namely;

AQF Code	Certificate III Qualifications
UEE30807	Certificate III in Electrotechnology Electrician
UEE31307	Certificate III in Refrigeration and Air-conditioning

The Employability Skills facets described here are broad industry requirements that may vary depending on qualification packaging rules and options.

Communication
Collect, organise and understand information related to the work task and it's relevant safety procedures
Communicate ideas and information to enable confirmation of work requirement and specifications
Communicate information using drawing, diagrams, schedules and manuals
Communicate and/or report work outcomes and/or any problems
Communicate ideas, information and advice to co-workers/clients to enable confirmation of product/work requirements and specifications
Communicate effectively in oral and written form
Access, read and comprehend safety instructions and procedures
Collect, organise and understand information related to a work task and it's relevant safety procedures
Undertake negotiations if there are conflicts in work requirements and/or priorities
Share industry information
Document work quotations and tender support schedules
Prepare time sheets
Prepare documentation on particular work tasks including evaluations, reports, timesheets and costings
Prepare and present formal reports to clients and/or co-workers
Teamwork
Work with others to generate ideas and review
Work effectively as an individual and as a member of a team
Work with others and in a team to identify work needs and review ideas against those needs
Work with other and in a team to evaluate and report on work tasks and outcomes
Work with others and in a team to present information to a client and/or co-worker
Relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
Influence individuals and teams
Develop and maintain networks for implementation and maintenance of industry standards in relation to workplace *computer systems*
Develop and maintain networks for the implementation and maintenance of industry knowledge, standards and requirements
Coach/mentor others and provide feedback

Problem Solving
Apply lateral thinking ideas to generate solutions in response to work problems
Apply operational research and research management skills
Clarify and identify work issues and apply processes to avoid interruptions to work flow/processes
Clarify problems and enterprise ideas to avoid interruptions to work flow/processes
Use testing techniques to anticipate or clarify problems to avoid interruptions to work flows and process
Generate ideas and alternatives
Analyse information to identify opportunities to develop solutions
Identify, assess and prioritise work risks to maintain efficiency, quality, productivity and work place safety at all times
Initiative & Enterprise
Recognise and respond to circumstances outside instructions or personal competence
Be proactive and apply strategies to overcome work blockages
Adopt proactive relationships with clients and co-workers
Identify and comply with all requirements and standards for work in the Electrotechnology industry
Apply enterprise best practice and quality systems
Generate ideas and translate into workplace actions and outcomes
Interact effectively with both internal and external industry stakeholders
Initiate and follow through on the implementation of the industry standards in the workplace
Translate ideas into action
Planning & Organising
Plan and organise activities including the maintenance and layout of own worksite and obtain equipment and materials to avoid work flow interruptions or wastage
Plan and organise activities to enable choices of maintenance methods of equipment, tools and related work documentation
Plan activities to enable choice of analysis/testing techniques of work outcomes and systems
Develop industry work plans including key performance indicators
Use mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Use computing capabilities that enable the use of mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Identify related industry compliance requirements
Identify, access and allocate required implementation resources
Maintain relevant industry and work records
Maintain relevant industry/work record systems
Maintain industry related records
Understand computer systems, their relationships and applications in the workplace
Establish clear implementation goals and deliverables
Monitor and optimise resource utilisation

Self Management
Plan own work within given task parameters
Set, monitor and satisfy personal work goals
Accept responsibility for given tasks
Clarify and confirm work instructions
Clarify own roles, goals, prerogatives and limitations in relation to the industry
Take responsibility for industry obligations
Evaluate and monitor own performance
Apply systematic and effective time management
Learning
Satisfy the competency requirements for the job
Maintain current knowledge of tools, devices, instruments, materials, work practices and systems
Seek learning opportunities
Provide technical instruction and learning assistance to assigned apprentices, trainees or other less experienced workers
Take control and manage own learning
Adopt a open approach to new ideas and techniques
Commit to and promote a culture of continuous learning
Set realistic learning goals for self development
Monitor and respond to learning process achievements
Technology
Use workplace technology to communicate with the client, document and present information
Use electronic information systems to communicate with co-workers and/or other related personnel
Use workplace technology related to the particular work tasks including tools, devices, instruments and materials
Use work place technology to collate, organise and maintain work documentation and information
Attain and maintain required technical accreditation/authority under the industry standards
Attain and maintain IT skills relevant to the Electrotechnology industry
Be willing to learn new IT skills
Be willing gain knowledge and skills relevant to new and emerging technologies

The Employability Skills described above are representative of the Electrotechnology Industry in general and may not reflect enterprise-specific requirements or job roles.

Learning and assessment strategies for each qualification should be based on the requirements of the units of competency comprising the qualification and the Assessment Guidelines [of UEE07 Training Package].

Table 8 Status of units of competency from the Electrotechnology HSC courses for Certificate I in ElectroComms Skills and Certificates II in Computer Assembly and Repair, Electrotechnology (Career Start) and Sustainable Energy (Career Start)

Unit code	Unit title	Prerequisite unit(s)	HSC indicative hours	Electrotechnology Curriculum Framework	Certificate I in ElectroComms Skills	Certificate II in Computer Assembly and Repair	Certificate II in Electrotechnology (Career Start)	Certificate II in Sustainable Energy (Career Start)
Qualification packaging rules					- *4 core* - *1 stream core* - *strand total of at least 3 from* ***Schedule 2***	- *9 core* - *1 stream core* - *strand total of at least 2 from* ***Schedule 2***	- *6 core* - *1 stream core* - *strand total of at least 7 from* ***Schedule 2***	- *6 core* - *1 stream core* - *strand total of at least 6 from* ***Schedule 2***
UEENEEC010B	Deliver a service to customers	Nil	10	compulsory (120 & 240)	stream core	stream core	stream core	stream core
UEENEEE001B	Apply OHS practices in the workplace	Nil	15	compulsory (120 & 240)	core	core	core	core
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components	Nil	30	compulsory (240) elective (120)	2	core	2	2
UEENEEE003B	Solve problems in extra-low voltage single path circuits	Nil	30	compulsory (240) elective (120)	2	core	core	core
UEENEEE004B	Solve problems in multiple path d.c. circuits	UEENEEE003B	35	compulsory (240) elective (120)	2	2	core	core
UEENEEE005B	Fix and secure equipment	Nil	15	compulsory (240) elective (120)	1	1	1	1
UEENEEE048B	Carry out routine work activities in an electrotechnology environment	Nil	25	compulsory (120 & 240)	core	2	core	2
UEENEEA002B	Select electronic components	Nil	15	elective (120, 240 & 60 SBT S)	1	1	1	1
UEENEED002B	Assemble, set-up and test personal computers	Nil	40	elective (120, 240 & 60 SBT S)	4	core	4	4

Unit code	Unit title	Prerequisite unit(s)	HSC indicative hours	Electrotechnology Curriculum Framework	Certificate I in ElectroComms Skills	Certificate II in Computer Assembly and Repair	Certificate II in Electrotechnology (Career Start)	Certificate II in Sustainable Energy (Career Start)
UEENEED004B	Use engineering applications software	Nil	40	elective (120, 240 & 60 SBT S)	2	core	2	2
UEENEED005B	Enter and verify operating instructions in microprocessor equipped devices	Nil	15	elective (120, 240 & 60 SBT S)	1	1	1	1
UEENEED043B	Install and configure a computer operating system and software	Nil	40	elective (120, 240 & 60 SBT S)	2	core	2	2
UEENEED046B	Set up and configure basic local area network	UEENEED002B	40	elective (120, 240 & 60 SBT S)	2	core	2	2
UEENEEE007B	Use drawings, diagrams, schedules and manuals	Nil	25	elective (120, 240 & 60 SBT S)	2	2	2	2
UEENEEE008B	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	UEENEEE005B UEENEEE007B	30	elective (120, 240 & 60 SBT S)	2	2	2	2
UEENEEE023B	Solve basic problems in electronic and digital equipment	Nil	40	elective (120, 240 & 60 SBT S)	4	4	4	4
UEENEEE032B	Document occupational hazards and risks in computer systems	Nil	15	elective (120, 240 & 60 SBT S)	1	core	1	1
UEENEEE038B	Participate in development and follow a personal competency development plan	Nil	10	elective (120, 240 & 60 SBT S)	–	core	–	–
UEENEEE040B	Identify and select components/accessories/ materials for electrotechnology work activities	Nil	15	elective (120, 240 & 60 SBT S)	core	3	core	3
UEENEEE041B	Use routine equipment/plant/technologies in an electrotechnology environment	Nil	20	elective (120, 240 & 60 SBT S)	3	3	core	3
UEENEEF007B	Set up the wireless capabilities of communications and data storage devices	Nil	30	elective (120, 240 & 60 SBT S)	2	2	2	2

Unit code	Unit title	Prerequisite unit(s)	HSC indicative hours	Electrotechnology Curriculum Framework	Certificate I in ElectroComms Skills	Certificate II in Computer Assembly and Repair	Certificate II in Electrotechnology (Career Start)	Certificate II in Sustainable Energy (Career Start)
UEENEEH001B	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies	UEENEEE002B	30	elective (120, 240 & 60 SBT S)	2	2	2	2
UEENEEH002B	Carry out basic repairs to electronic apparatus by replacement of components	UEENEEE002B	30	elective (120, 240 & 60 SBT S)	2	2	2	2
UEENEEH004B	Set up and test residual audio/video equipment	Nil	30	elective (120, 240 & 60 SBT S)	2	2	2	2
UEENEEJ002B	Prepare refrigeration tubing and fittings	UEENEEE002B UEENEEE007B	30	elective (120, 240 & 60 SBT S)	2	2	2	2
UEENEEK012B	Provide basic sustainable energy solutions for energy reduction in domestic premises	Nil	25	elective (120, 240 & 60 SBT S)	2	2	2	core
UEENEEK013B	Apply sustainable energy practices in daily activities	Nil	30	elective (120, 240 & 60 SBT S)	5	5	5	core
UEENEEK014B	Promote sustainable energy practice in community	Nil	25	elective (120, 240 & 60 SBT S)	2	2	2	core
UEENEEC001B	Maintain documentation	Nil	10	elective (120, 240 & 60 SBT S)	stream core	stream core	stream core	stream core
UEENEED001B	Use basic computer applications relevant to a workplace	Nil	10	elective (120, 240 & 60 SBT S)	core	stream core	stream core	stream core
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	Nil	10	elective (120, 240 & 60 SBT S)	–	stream core	stream core	stream core
UEENEEE022B	Carry out preparatory electrotechnology work activities	Nil	40	elective (240 - SBT only & 60 SBT S)	3	3	3	3
UEENEEE037B	Document occupational hazards and risks in electrotechnology	Nil	15	elective (240 - SBT only & 60 SBT S)	1	1	1	1

Unit code	Unit title	Prerequisite unit(s)	HSC indicative hours	Electrotechnology Curriculum Framework	Certificate I in ElectroComms Skills	Certificate II in Computer Assembly and Repair	Certificate II in Electrotechnology (Career Start)	Certificate II in Sustainable Energy (Career Start)
UEENEEG011B	Carry out basic repairs to electrical apparatus	UEENEEE002B	40	elective (240 - SBT only & 60 SBT S)	2	2	2	2
UEENEEG001B	Solve problems in electromagnetic circuits	Nil	60	elective (60 Ext)	4	4	4	4

Table 9 Status of units of competency from the Electrotechnology HSC courses for Certificate II in Technical Support and Certificate III in Electrotechnology Electrician

Unit code	Unit title	Prerequisite unit(s)	HSC indicative hours	Electrotechnology Curriculum Framework	Certificate II in Technical Support	Certificate III in Electrotechnology Electrician
Qualification packaging rules					*- 10 core* *- 1 stream core* *- strand total of at least 2 from **Schedule 2***	*- 17 core* *- 2 stream core* *- strand total of at least 6 from **Schedule 3***
UEENEEC010B	Deliver a service to customers	Nil	10	compulsory (120 & 240)	stream core	stream core
UEENEEE001B	Apply OHS practices in the workplace	Nil	15	compulsory (120 & 240)	core	core
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components	Nil	30	compulsory (240) elective (120)	core	core
UEENEEE003B	Solve problems in extra-low voltage single path circuits	Nil	30	compulsory (240) elective (120)	core	core
UEENEEE004B	Solve problems in multiple path d.c. circuits	UEENEEE003B	35	compulsory (240) elective (120)	core	core
UEENEEE005B	Fix and secure equipment	Nil	15	compulsory (240) elective (120)	core	core
UEENEEE048B	Carry out routine work activities in an electrotechnology environment	Nil	25	compulsory (120 & 240)	2	–
UEENEEA002B	Select electronic components	Nil	15	elective (120, 240 & 60 SBT S)	1	1
UEENEED002B	Assemble, set-up and test personal computers	Nil	40	elective (120, 240 & 60 SBT S)	4	4
UEENEED004B	Use engineering applications software	Nil	40	elective (120, 240 & 60 SBT S)	2	2
UEENEED005B	Enter and verify operating instructions in microprocessor equipped devices	Nil	15	elective (120, 240 & 60 SBT S)	1	1

Unit code	Unit title	Prerequisite unit(s)	HSC indicative hours	Electrotechnology Curriculum Framework	Certificate II in Technical Support	Certificate III in Electrotechnology Electrician
UEENEED043B	Install and configure a computer operating system and software	Nil	40	elective (120, 240 & 60 SBT S)	2	–
UEENEED046B	Set up and configure basic local area network	UEENEED002B	40	elective (120, 240 & 60 SBT S)	2	–
UEENEEE007B	Use drawings, diagrams, schedules and manuals	Nil	25	elective (120, 240 & 60 SBT S)	core	core
UEENEEE008B	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	UEENEEE005B UEENEEE007B	30	elective (120, 240 & 60 SBT S)	2	core
UEENEEE023B	Solve basic problems in electronic and digital equipment	Nil	40	elective (120, 240 & 60 SBT S)	4	–
UEENEEE032B	Document occupational hazards and risks in computer systems	Nil	15	elective (120, 240 & 60 SBT S)	1	–
UEENEEE038B	Participate in development and follow a personal competency development plan	Nil	10	elective (120, 240 & 60 SBT S)	core	–
UEENEEE040B	Identify and select components/accessories/materials for electrotechnology work activities	Nil	15	elective (120, 240 & 60 SBT S)	3	–
UEENEEE041B	Use routine equipment/plant/technologies in an electrotechnology environment	Nil	20	elective (120, 240 & 60 SBT S)	3	–
UEENEEF007B	Set up the wireless capabilities of communications and data storage devices	Nil	30	elective (120, 240 & 60 SBT S)	2	2
UEENEEH001B	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies	UEENEEE002B	30	elective (120, 240 & 60 SBT S)	2	1
UEENEEH002B	Carry out basic repairs to electronic apparatus by replacement of components	UEENEEE002B	30	elective (120, 240 & 60 SBT S)	2	2
UEENEEH004B	Set up and test residual audio/video equipment	Nil	30	elective (120, 240 & 60 SBT S)	2	2

Unit code	Unit title	Prerequisite unit(s)	HSC indicative hours	Electrotechnology Curriculum Framework	Certificate II in Technical Support	Certificate III in Electrotechnology Electrician
UEENEEJ002B	Prepare refrigeration tubing and fittings	UEENEEE002 UEENEEE007B	30	elective (120, 240 & 60 SBT S)	2	2
UEENEEK012B	Provide basic sustainable energy solutions for energy reduction in domestic premises	Nil	25	elective (120, 240 & 60 SBT S)	2	–
UEENEEK013B	Apply sustainable energy practices in daily activities	Nil	30	elective (120, 240 & 60 SBT S)	5	–
UEENEEK014B	Promote sustainable energy practice in community	Nil	25	elective (120, 240 & 60 SBT S)	2	–
UEENEEC001B	Maintain documentation	Nil	10	elective (120, 240 & 60 SBT S)	stream core	stream core
UEENEED001B	Use basic computer applications relevant to a workplace	Nil	10	elective (120, 240 & 60 SBT S)	–	stream core
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	Nil	10	elective (120, 240 & 60 SBT S)	stream core	stream core
UEENEEE022B	Carry out preparatory electrotechnology work activities	Nil	40	elective (60 SBT S)	core	–
UEENEEE037B	Document occupational hazards and risks in electrotechnology	Nil	15	elective (60 SBT S)	core	–
UEENEEG011B	Carry out basic repairs to electrical apparatus	UEENEEE002B	40	elective (60 SBT S)	core	–
UEENEEG001B	Solve problems in electromagnetic circuits	Nil	60	elective (60 Ext)	4	core

16 Glossary

AQF	**Australian Qualifications Framework.** The AQF is the policy framework that defines all qualifications recognised nationally in post-compulsory education and training in Australia. The AQF comprises titles and guidelines that define each qualification, as well as the principles and protocols covering cross-sectoral qualification links and the issuing of qualifications and statements of attainment.
AQTF	**The Australian Quality Training Framework** The AQTF is the national set of standards which assures nationally consistent, high-quality training and assessment services for the clients of Australia's vocational education and training system. AQTF 2007 is the current version of the framework effective from 1 July 2007.
assessment guidelines	An endorsed component of a Training Package which underpins assessment and which sets out the industry approach to valid, reliable, flexible and fair assessment.
Australian Apprenticeships	Formerly known as 'New Apprenticeships'. Australian Apprenticeships encompass all apprenticeships and traineeships. They combine time at work with training and can be full-time, part-time or school-based. (www.australianapprenticeships.gov.au)
AVETMISS	**Australian Vocational Education and Training Management Information Statistical Standard.**
competency	The broad concept of industry competency concerns the ability to perform particular tasks and duties to the standard of performance expected in the workplace. Competency requires the application of specified skills, knowledge and attitudes relevant to effective participation in an industry, industry sector or enterprise.
competency standard	Competency standards in Training Packages are determined by industry to meet identified industry skill needs. Competency standards are made up of a number of units of competency each of which describes a key function or role in a particular job function or occupation. Each unit of competency within a Training Package is linked to one or more AQF qualification.
compulsory units of competency	Units that must be studied for the Higher School Certificate.
core units of competency	Units of competency required by the Training Package to be eligible for the AQF VET qualification.
DEEWR	**Department of Education, Employment and Workplace Relations** (Commonwealth).
elements of competency	The basic building blocks of a unit of competency which describe the key activities or elements of the work covered by the unit.

examinable units of competency	Units of competency that can be examined in the optional HSC examination.
ICFIP	**Industry Curriculum Framework Information Package.** A document produced by the school system authorities to provide schools with information on teacher qualifications and resource requirements that must be adhered to for the delivery of vocational courses. It also includes quality assurance checklists that must be completed each year to demonstrate compliance with the Australian Quality Training Framework.
Industry Skills Councils (national)	The **Industry Skills Councils** have two key roles: • providing accurate industry intelligence to the VET sector about current and future skill needs and training requirements; and • supporting the development, implementation and continuous improvement of quality nationally recognised training products and services, including Training Packages.
ITAB (state)	**Industry Training Advisory Body.** Independent incorporated associations or companies that assist with the development of training.
national recognition	National recognition is: • recognition by an RTO of the AQF qualifications and statements of attainment issued by all other RTOs, thereby enabling national recognition of the qualifications and statements of attainment issued to any person • recognition by each state and territory's registering body of the training organisations registered by any other state or territory's registering body and of its registration decisions • recognition by all state and territory course-accrediting bodies and registering bodies of the courses accredited by each state or territory's course-accrediting body and of its accreditation decisions.
NTIS	**National Training Information Service.** The national register for recording information about RTOs, Training Packages and accredited courses. (www.ntis.gov.au)
OHS	**Occupational Health and Safety.**
QRRRC	**Qualifications, Recognition and Resource Requirements Committee.** The QRRRC: • determines the teacher qualifications and resource requirements for the delivery of VET courses in NSW schools • has responsibility for recognising teacher qualifications and recommending appropriate professional development for VET teachers • includes representatives from the school systems, industry, TAFE NSW and the Office of the Board of Studies.

qualification	Formal certification in the VET sector by an RTO that a person has satisfied all requirements of the units of competency or modules that comprise an AQF qualification, as specified by: • a nationally endorsed Training Package, or • an accredited course that provides training for that qualification.
recognition of prior learning (RPL)	An assessment process that assesses an individual's non-formal and informal learning to determine the extent to which that individual has achieved the required learning outcomes, competency outcomes, or standards for entry to, and/or partial or total completion of, a qualification.
RTO	**Registered Training Organisation.** A training organisation registered by a registering body in accordance with the AQTF, within a defined scope of registration. (Includes TAFE NSW, private providers and schools.)
scope of registration	The particular services and products an RTO is registered to provide. The RTO's scope defines the specific AQF qualifications, units of competency and accredited courses it is registered to provide, and whether it is registered to provide: • both training delivery and assessment services, and to issue the relevant AQF qualifications and statements of attainment, or • only assessment services, and to issue AQF qualifications and statements of attainment.
Statement of Attainment	May be issued in the vocational education and training sector by a Registered Training Organisation when an individual has completed one or more units of competency from nationally recognised qualifications(s)/ courses(s).
Training Package	A nationally endorsed, integrated set of competency standards, assessment guidelines and AQF qualifications for a specific industry, industry sector or enterprise.
training plan	A documented program of training and assessment required for an apprenticeship/traineeship training contract. It is developed by an RTO in consultation with the parties to the contract as the basis for training and assessing a person undertaking an apprenticeship or traineeship.
unit of competency	Specification of industry knowledge and skill and the application of that knowledge and skill to the standard of performance expected in the workplace.
VET	**Vocational Education and Training.**
VETAB	**The Vocational Education and Training Accreditation Board.**
VTO	**Vocational Training Order**

17 Electrotechnology Curriculum Framework School-based Apprenticeship pathway

17.1 Electrotechnology School-based Apprenticeship (240 indicative hours)

Purpose

The purpose of this course is to provide school-based apprentices with the opportunity to gain credit towards Certificate III qualifications within the electrotechnology industry and unit credit towards their HSC.

Course eligibility

This course is available to students who meet the following requirement:

participation in an approved school-based apprenticeship training contract in one of the following:

- Certificate III in Electrotechnology Electrician (UEE30807)
- Certificate III in Refrigeration and Air-Conditioning (UEE31307).

Before offering the Electrotechnology School-based Apprenticeship course, schools should ensure that the RTO undertaking delivery has the scope to deliver the relevant qualification and/or relevant units of competency.

Course structure

The Electrotechnology School-based Apprenticeship comprises seven compulsory units of competency and an elective pool containing 15 units of competency.

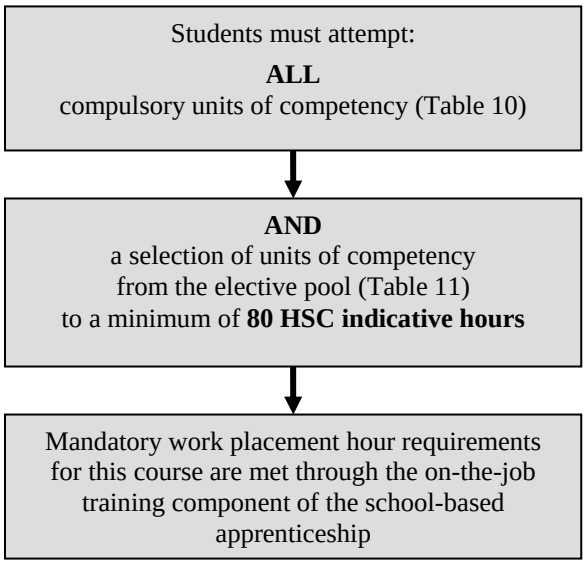
Details of the compulsory units of competency, including HSC requirements and advice, are included in Part B of the Syllabus.

Details of the elective units of competency listed in Table 11 are available in either Part B of the Syllabus or the Electrotechnology Training Package (UEE07) or at www.ntis.gov.au.

Section 15 outlines the qualification packaging rules for qualifications available through the Electrotechnology Curriculum Framework. Table 12 (pp 92–93) list the status of each unit of competency in relation to the qualifications. This section should guide the selection of units of competency to meet qualification requirements.

The Electrotechnology School-based Apprenticeship (240 indicative hours) course is accredited for a total of four units at the Preliminary and/or HSC level.

Course requirements – Electrotechnology School-based Apprenticeship (240 indicative hours)



An external written Higher School Certificate examination will be conducted for this course. This examination is optional. In the year they will complete the course, students will specify whether or not they choose to undertake the external written examination (refer to Sections 11.2 and 11.3).

The units of competency for the optional HSC examination are listed in the HSC exam specifications in Section 11.3 of this document.

AQF VET qualifications

To receive AQF VET qualifications, students must meet the assessment requirements of the Electrotechnology Training Package (UEE07). A qualified assessor must conduct the assessment.

Depending on the selection and achievement of units of competency, the possible qualification outcomes are:

- Statement of Attainment towards Certificate III in Electrotechnology Electrician (UEE30807)
- Statement of Attainment towards Certificate III in Refrigeration and Air-Conditioning (UEE31307).

Qualification packaging rules are in Section 15 of this document.

Further information on assessment is in Section 11 of this document and in the document *Assessment and Reporting in Electrotechnology Stage 6*.

Table 10 Electrotechnology School-based Apprenticeship (240 indicative hours) – compulsory units of competency

COMPULSORY **Attempt ALL units of competency**			
Unit code	**Unit title**	**Unit-specific prerequisite**	**HSC indicative hours of credit**
UEENEEC010B	Deliver a service to customers	Nil	10
UEENEEE001B	Apply OHS practices in the workplace	Nil	15
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components	Nil	30
UEENEEE003B	Solve problems in extra-low voltage single path circuits	Nil	30
UEENEEE004B	Solve problems in multiple path d.c. circuits	UEENEEE003B	35
UEENEEE005B	Fix and secure equipment	Nil	15
UEENEEE048B	Carry out routine work activities in an electrotechnology environment	Nil	25
		Total compulsory hours	**160**

Table 11 Electrotechnology School-based Apprenticeship (240 indicative hours) – elective pool

Attempt units to a minimum value of 80 indicative hours				
Unit code	**Unit title**	**Schedule 3 strand weighting**	**Unit-specific prerequisite**	**HSC indicative hours of credit**
Commercial				
UEENEEC001B	Maintain documentation	–	Nil	10
UEENEEC002B	Source and purchase material/parts for installation or service jobs	–	Nil	10
UEENEEC003B	Provide quotations for installations or service jobs	–	Nil	10
Computer Systems				
UEENEED001B	Use basic computer applications relevant to a workplace	–	Nil	10
Cross Discipline				
UEENEEE007B	Use drawings, diagrams, schedules and manuals	–	Nil	25
UEENEEE008B	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	–	UEENEEE005B UEENEEE007B	30
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	–	Nil	15
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	–	Nil	10
UEENEEE033B	Document occupational hazards and risks in electrical work	–	Nil	15
UEENEEE036B	Document occupational hazards and risks in refrigeration and air-conditioning	–	Nil	15
Electrical				
UEENEEG001B	Solve problems in electromagnetic circuits	–	Nil	60
UEENEEG064B	Repair mechanical components of electrical machines	3	UEENEEE002B UEENEEE005B UEENEEE007B	40

Table 11 cont/d

Unit code	Unit title	Schedule 3 strand weighting	Unit-specific prerequisite	HSC indicative hours of credit
Refrigeration and air-conditioning				
UEENEEJ002B	Prepare refrigeration tubing and fittings	2	UEENEEE002B UEENEEE007B	30
UEENEEJ003B	Determine the basic operating conditions of vapour compression systems	2	UEENEEE002B	35
UEENEEJ004B	Determine the basic operating conditions of air-conditioning systems	2	UEENEEE002B	35

17.2 Electrotechnology School-based Apprenticeship Specialisation (60 or 120 indicative hours)

Purpose

The purpose of this course is to provide school-based apprentices with the opportunity to gain further credit towards Certificate III qualifications within the electrotechnology industry and unit credit towards their HSC.

Course eligibility

It is available to students who meet the following requirements:

participation in an approved school-based apprenticeship training contract in one of the following:

- Certificate III in Electrotechnology Electrician (UEE30807)
- Certificate III in Refrigeration and Air-Conditioning (UEE31307)

and

are currently enrolled in, or have completed, the Electrotechnology School-based Apprenticeship (240 indicative hours).

The maximum number of Preliminary and/or HSC units available from the Electrotechnology School-based Apprenticeship pathway of this Framework is six units. That is, courses can total up to 360 hours. In addition to courses within the Framework students may undertake locally designed Board Endorsed VET courses drawing from the Electrotechnology Training Package (UEE07). Such courses may provide additional HSC credit for students.

Before offering the Electrotechnology School-based Apprenticeship Specialisation course, schools should ensure that the RTO undertaking delivery has the scope to deliver the relevant qualification and/or relevant units of competency.

Course structure

The Electrotechnology School-based Apprenticeship Specialisation can consist of units of competency drawn from the Electrotechnology School-based Apprenticeship (240 indicative hours) course (listed in Table 11) not previously attempted by students.

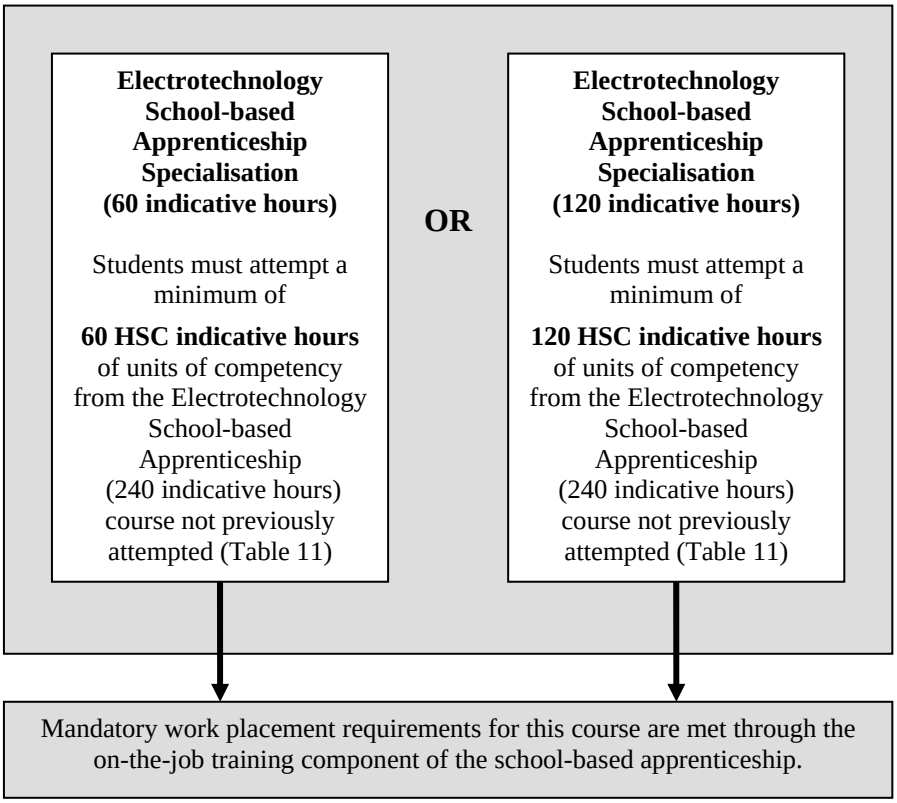
Details of the elective units of competency listed in Table 11 are available in either Part B of the Syllabus or the Electrotechnology Training Package (UEE07) or at www.ntis.gov.au.

Section 15 outlines the qualification packaging rules for qualifications available through the Electrotechnology Curriculum Framework. Table 12 (pp 92–93) list the status of each unit of competency in relation to the qualifications. This section should guide the selection of units of competency to meet qualification requirements.

The Electrotechnology School-based Apprenticeship Specialisation (60 indicative hours) course is accredited for one unit at the Preliminary or HSC level. The Electrotechnology School-based Apprenticeship Specialisation (120 indicative hours) is accredited for a total of two units at the Preliminary and/or HSC level.

Course requirements – Electrotechnology School-based Apprenticeship Specialisation (60 or 120 indicative hours)

Students may only undertake an Electrotechnology School-based Apprenticeship Specialisation if they are currently enrolled in, or have completed, the Electrotechnology School-based Apprenticeship (240 indicative hours) course.



AQF VET qualifications

To receive AQF VET qualifications, students must meet the assessment requirements of the Electrotechnology Training Package (UEE07). A qualified assessor must conduct the assessment.

Depending on the selection and achievement of units of competency, the possible qualification outcomes are:

- Statement of Attainment towards Certificate III in Electrotechnology Electrician (UEE30807)
- Statement of Attainment towards Certificate III in Refrigeration and Air-Conditioning (UEE31307).

Qualification packaging rules are in Section 15 of this document.

Further information on assessment is in Section 11 of this document and in the document *Assessment and Reporting in Electrotechnology Stage 6*.

Table 12 Status of units of competency from the Electrotechnology School-based Apprenticeship HSC courses for Certificates III in Electrotechnology Electrician and Refrigeration and Air-Conditioning

Unit code	Unit title	Prerequisite unit(s)	HSC indicative hours	Electrotechnology Curriculum Framework	Certificate III in Electrotechnology Electrician	Certificate III in Refrigeration & Air-Conditioning
Qualification packaging rules					- *17 core* - *2 stream core* - *strand total of at least 6 from Schedule 3*	- *23 core* - *2 stream core* - *strand total of at least 3 from Schedule 3*
UEENEEC010B	Deliver a service to customers	Nil	10	compulsory (SBA 240)	stream core	stream core
UEENEEE001B	Apply OHS practices in the workplace	Nil	15	compulsory (SBA 240)	core	core
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components	Nil	30	compulsory (SBA 240)	core	core
UEENEEE003B	Solve problems in extra-low voltage single path circuits	Nil	30	compulsory (SBA 240)	core	core
UEENEEE004B	Solve problems in multiple path d.c. circuits	UEENEEE003B	35	compulsory (SBA 240)	core	–
UEENEEE005B	Fix and secure equipment	Nil	15	compulsory (SBA 240)	core	core
UEENEEE048B	Carry out routine work activities in an electrotechnology environment	Nil	25	compulsory (SBA 240)	–	–
UEENEEC001B	Maintain documentation	Nil	10	elective (SBA 240 & SBA S 60/120)	stream core	stream core
UEENEEC002B	Source and purchase material/parts for installation or service jobs	Nil	10	elective (SBA 240 & SBA S 60/120)	stream core	stream core
UEENEEC003B	Provide quotations for installations or service jobs	Nil	10	elective (SBA 240 & SBA S 60/120)	stream core	stream core
UEENEED001B	Use basic computer applications relevant to a workplace	Nil	10	elective (SBA 240 & SBA S 60/120)	stream core	stream core

Unit code	Unit title	Prerequisite unit(s)	HSC indicative hours	Electrotechnology Curriculum Framework	Certificate III in Electrotechnology Electrician	Certificate III in Refrigeration & Air-Conditioning
UEENEEE007B	Use drawings, diagrams, schedules and manuals	Nil	25	elective (SBA 240 & SBA S 60/120)	core	core
UEENEEE008B	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	UEENEEE005B UEENEEE007B	30	elective (SBA 240 & SBA S 60/120)	core	–
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	Nil	15	elective (SBA 240 & SBA S 60/120)	stream core	stream core
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	Nil	10	elective (SBA 240 & SBA S 60/120)	stream core	stream core
UEENEEE033B	Document occupational hazards and risks in electrical work	Nil	15	elective (SBA 240 & SBA S 60/120)	core	–
UEENEEE036B	Document occupational hazards and risks in refrigeration and air-conditioning	Nil	15	elective (SBA 240 & SBA S 60/120)	–	core
UEENEEG001B	Solve problems in electromagnetic circuits	Nil	60	elective (SBA 240 & SBA S 60/120)	core	–
UEENEEG064B	Repair mechanical components of electrical machines	UEENEEE002B UEENEEE005B UEENEEE007B	40	elective (SBA 240 & SBA S 60/120)	3	3
UEENEEJ002B	Prepare refrigeration tubing and fittings	UEENEEE002B UEENEEE007B	30	elective (SBA 240 & SBA S 60/120)	2	core
UEENEEJ003B	Determine the basic operating conditions of vapour compression systems	UEENEEE002B	35	elective (SBA 240 & SBA S 60/120)	2	core
UEENEEJ004B	Determine the basic operating conditions of air-conditioning systems	UEENEEE002B	35	elective (SBA 240 & SBA S 60/120)	2	core