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Department of Education, Employment and Workplace Relations

UEE11 Electrotechnology Training Package

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Version	Release Date	Authorisation	Comments
1 UEE11	8 Dec 2011		<p>All qualifications comply with the NQC’s Packaging Rules for Flexibility Formula in that:</p> <ul style="list-style-type: none"> a) All qualifications are core and elective only. b) Elective Units are listed in groups for each qualification and the schedule of electives removed from the package. c) All non regulated qualifications comprise a maximum two thirds core units and minimum one third elective, with provision for the importation of up to one sixth of the qualification as electives from other sources. d) The NQC’s formula provided for qualifications with regulated outcomes to be exempt from the core and elective ratios and the importation provisions. Thus all qualifications which have regulated outcomes are exempt from these provisions. <p>New Qualifications</p> <p>UEE10111; UEE20111; UEE20411; UEE20511; UEE20711; UEE20811; UEE20911; UEE21011; UEE21211; UEE21311; UEE21411; UEE21611; UEE21711; UEE21911; UEE22011; UEE22111; UEE30111; UEE30211; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE30911; UEE31011; UEE31111; UEE31211; UEE31411; UEE31511; UEE32011; UEE32111; UEE32211; UEE33011; UEE40111; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41511; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE42911; UEE43011; UEE43111; UEE43211; UEE50111; UEE50211; UEE50311; UEE50411; UEE50511;</p>

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			UEENEEE103A; UEENEEE108A; UEENEEE110A; UEENEEE114A; UEENEEE117A; UEENEEE118A; UEENEEE119A; UEENEEE121A; UEENEEE122A; UEENEEE123A; UEENEEE124A; UEENEEE127A; UEENEEE128A; UEENEEE129A; UEENEEE130A; UEENEEE131A; UEENEEE141A; UEENEEE142A; UEENEEE143A; UEENEEE144A; UEENEEE145A; UEENEEE146A; UEENEEE147A; UEENEEE148A; UEENEEE149A; UEENEEE150A; UEENEEE151A; UEENEEE152A; UEENEEE160A; UEENEEE161A; UEENEEE162A; UEENEEE163A; UEENEEE164A; UEENEEE179A; UEENEEE185A; UEENEEE190A; UEENEEE191A; UEENEEE192A F - Data and Voice units UEENEEF101A; UEENEEF102A; UEENEEF103A; UEENEEF104A; UEENEEF105A; UEENEEF106A; UEENEEF107A; UEENEEF108A; UEENEEF109A; UEENEEF110A; UEENEEF111A; UEENEEF112A; UEENEEF113A; UEENEEF114A; UEENEEF115A; G - Electrical units UEENEEG110A; UEENEEG111A; UEENEEG113A; UEENEEG116A; UEENEEG118A; UEENEEG119A; UEENEEG120A; UEENEEG121A; UEENEEG122A; UEENEEG123A; UEENEEG124A; UEENEEG125A; UEENEEG126A; UEENEEG127A; UEENEEG128A; UEENEEG129A; UEENEEG130A; UEENEEG131A; UEENEEG132A; UEENEEG143A; UEENEEG144A; UEENEEG145A; UEENEEG150A; UEENEEG151A; UEENEEG152A; UEENEEG153A; UEENEEG154A; UEENEEG155A; UEENEEG156A; UEENEEG157A; UEENEEG158A; UEENEEG159A;

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			UEENEEG160A; UEENEEG161A; UEENEEG162A; UEENEEG164A; UEENEEG165A; UEENEEG166A; UEENEEG167A; UEENEEG168A; UEENEEG169A; UEENEEG170A; UEENEEG172A; UEENEEG175A; UEENEEG177A; UEENEEG179A; UEENEEG180A; UEENEEG181A; UEENEEG182A; UEENEEG183A; UEENEEG184A; UEENEEG185A; UEENEEG186A; UEENEEG187A; UEENEEG188A; UEENEEG189A; UEENEEG197A; UEENEEG198A; UEENEEG199A; H - Electronic units UEENEEH101A; UEENEEH102A; UEENEEH103A; UEENEEH104A; UEENEEH105A; UEENEEH106A; UEENEEH107A; UEENEEH108A; UEENEEH109A; UEENEEH110A; UEENEEH111A; UEENEEH112A; UEENEEH113A; UEENEEH114A; UEENEEH115A; UEENEEH116A; UEENEEH117A; UEENEEH118A; UEENEEH119A; UEENEEH120A; UEENEEH121A; UEENEEH122A; UEENEEH123A; UEENEEH124A; UEENEEH127A; UEENEEH128A; UEENEEH129B; UEENEEH130A; UEENEEH131A; UEENEEH132A; UEENEEH133A; UEENEEH134A; UEENEEH135A; UEENEEH136A; UEENEEH137A; UEENEEH138A; UEENEEH139A; UEENEEH140A; UEENEEH141A; UEENEEH142A; UEENEEH145A; UEENEEH146A; UEENEEH147A; UEENEEH148A; UEENEEH149A; UEENEEH150A; UEENEEH151A; UEENEEH152A; UEENEEH153A; UEENEEH154A; UEENEEH155A; UEENEEH156A; UEENEEH157A; UEENEEH158A; UEENEEH159A; UEENEEH160A; UEENEEH161A; UEENEEH162A; UEENEEH163A; UEENEEH164A;

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			UEENEEH165A; UEENEEH166A; UEENEEH167A; UEENEEH168A; UEENEEH169A; UEENEEH171A; UEENEEH172A; UEENEEH173A; UEENEEH174A; UEENEEH175A; UEENEEH176A; UEENEEH177A; UEENEEH178A; UEENEEH179A; UEENEEH180A; UEENEEH181A; UEENEEH182A; UEENEEH183A; UEENEEH184A; UEENEEH185A; UEENEEH186A; UEENEEH187A; UEENEEH188A; UEENEEH189A; UEENEEH190A; UEENEEH191A; UEENEEH192A I – Instrumentation and Industrial Control UEENEEI101A; UEENEEI102A; UEENEEI103A; UEENEEI104A; UEENEEI105A; UEENEEI106A; UEENEEI107A; UEENEEI108A; UEENEEI110A; UEENEEI111A; UEENEEI112A; UEENEEI113A; UEENEEI114A; UEENEEI115A; UEENEEI116A; UEENEEI117A; UEENEEI118A; UEENEEI119A; UEENEEI120A; UEENEEI121A; UEENEEI122A; UEENEEI123A; UEENEEI124A; UEENEEI125A; UEENEEI126A; UEENEEI127A; UEENEEI128A; UEENEEI129A; UEENEEI130A; UEENEEI131A; UEENEEI132A; UEENEEI133A; UEENEEI134A; UEENEEI135A; UEENEEI136A; UEENEEI137A; UEENEEI138A; UEENEEI139A; UEENEEI140A; UEENEEI141A; UEENEEI142A; UEENEEI143A; UEENEEI144A; UEENEEI145A; UEENEEI146A; UEENEEI147A; UEENEEI148A; UEENEEI149A; UEENEEI150A; UEENEEI151A; UEENEEI152A; UEENEEI153A; UEENEEI154A; UEENEEI155A; UEENEEI156A; UEENEEI157A J – Refrigeration and Air Conditioning Units UEENEEJ120A

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			<p>K – Renewable and Sustainable Energy Units UEENEEK101A; UEENEEK102A; UEENEEK103A; UEENEEK104A; UEENEEK105A; UEENEEK106A; UEENEEK107A; UEENEEK108A; UEENEEK109A; UEENEEK110A; UEENEEK111A; UEENEEK112A; UEENEEK114A; UEENEEK116A; UEENEEK117A; UEENEEK118A; UEENEEK120A; UEENEEK121A; UEENEEK122A; UEENEEK123A; UEENEEK124A; UEENEEK125A; UEENEEK127A; UEENEEK128A; UEENEEK129A; UEENEEK130A; UEENEEK131A; UEENEEK132A; UEENEEK133A; UEENEEK134A; UEENEEK135A; UEENEEK136A; UEENEEK137A; UEENEEK138A; UEENEEK139A; UEENEEK140A; UEENEEK142A; UEENEEK143A; UEENEEK144A; UEENEEK145A; UEENEEK146A; UEENEEK148A; UEENEEK149A; UEENEEK151A; UEENEEK152A; UEENEEK153A; UEENEEK154A; UEENEEK155A</p> <p>N – Rail Signalling Units UEENEEN101A; UEENEEN102A; UEENEEN103A; UEENEEN104A; UEENEEN105A; UEENEEN106A; UEENEEN107A; UEENEEN108A; UEENEEN109A; UEENEEN110A; UEENEEN111A; UEENEEN112A; UEENEEN114A; UEENEEN116A; UEENEEN118A; UEENEEN121A; UEENEEN126A; UEENEEN127A; UEENEEN128A</p> <p>P – Restricted Electrical Units UEENEEP010A; UEENEEP011A; UEENEEP013A; UEENEEP014A; UEENEEP015A; UEENEEP016A; UEENEEP018A; UEENEEP019A; UEENEEP020A; UEENEEP021A; UEENEEP022A; UEENEEP023A; UEENEEP026A</p>

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			<p>Units Removed</p> <p>UEENEEA001B; UEENEEA002B; UEENEEA003B; UEENEEA004B; UEENEEA005B; UEENEEA006B; UEENEEA010B; UEENEEA012B; UEENEEA013B; UEENEEB001B; UEENEEC015B; UEENEEC028B; UEENEEC029B; UEENEEED001B; UEENEEED002B; UEENEEED003B; UEENEEED004B; UEENEEED005B; UEENEEED007B; UEENEEED008B; UEENEEED009B; UEENEEED010B; UEENEEED011B; UEENEEED012B; UEENEEED013B; UEENEEED014B; UEENEEED015B; UEENEEED016B; UEENEEED017B; UEENEEED018B; UEENEEED019B; UEENEEED020B; UEENEEED021B; UEENEEED022B; UEENEEED023B; UEENEEED024B; UEENEEED025B; UEENEEED026B; UEENEEED027B; UEENEEED028B; UEENEEED029B; UEENEEED030B; UEENEEED031B; UEENEEED032B; UEENEEED033B; UEENEEED034B; UEENEEED043B; UEENEEED044B; UEENEEED045B; UEENEEED046B; UEENEEED048B; UEENEEED050B; UEENEEED051B; UEENEEED052B; UEENEEED053B; UEENEEED054B; UEENEEED055B; UEENEEEE001B; UEENEEEE002B; UEENEEEE003B; UEENEEEE004B; UEENEEEE005B; UEENEEEE007B; UEENEEEE008B; UEENEEEE010B; UEENEEEE014B; UEENEEEE016B; UEENEEEE017B; UEENEEEE018B; UEENEEEE019C; UEENEEEE021B; UEENEEEE022B; UEENEEEE023B; UEENEEEE024C; UEENEEEE025B; UEENEEEE026B; UEENEEEE027B; UEENEEEE028B; UEENEEEE029B; UEENEEEE030B; UEENEEEE032B; UEENEEEE033B; UEENEEEE034B; UEENEEEE035B; UEENEEEE036B; UEENEEEE037B; UEENEEEE041B; UEENEEEE042B;</p>

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			<p>UEENEEK029B; UEENEEK030B; UEENEEK031B; UEENEEK032B; UEENEEK033B; UEENEEK034B; UEENEEK035C; UEENEEK036B; UEENEEK037B; UEENEEK038B; UEENEEK039B; UEENEEK040B; UEENEEK042A; UEENEEK043A; UEENEEK045A; UEENEEK046A; UEENEEK047A; UEENEEK048A; UEENEEK049A; UEENEEK050A; UEENEEK051A; UEENEEN001B; UEENEEN002B; UEENEEN003B; UEENEEN004B; UEENEEN005B; UEENEEN006B; UEENEEN007B; UEENEEN008B; UEENEEN009B; UEENEEN010B; UEENEEN011B; UEENEEN012B; UEENEEN013B; UEENEEN014B; UEENEEN015B; UEENEEN016B; UEENEEN017B; UEENEEN018B; UEENEEN019B; UEENEEN020B; UEENEEN021A; UEENEEN025B; UEENEEN026B; UEENEEN027B; UEENEEN028B; UEENEENP001B; UEENEENP002B; UEENEENP003B; UEENEENP004B; UEENEENP005B; UEENEENP006B; UEENEENP007B; UEENEENP008B</p> <p>Imported Units Added</p> <p>NWP210B; NWP276A; PMASUP410B; UETTDRIS43A; UETTDRIS44A; UETTDRIS47A; UETTDRIS67A; UETTDRIS68A; UETTDRIS69A; UETTDRIS70A; UETTDRIS71A; UETTDRIS72A; UETTDRIS73A; UETTDRIS74A; UETTDORSB39A</p> <p>Imported Units Removed</p> <p>BSBITU306A; BSBSMB405A; ICTTEN3089A; ICTTEN4081A; ICTTEN4085A; ICTTEN5083A; PMBQUAL390A; TLIB2034A; TLIB3040A; TLIB3048A ; TLIB3053A; TLIB3058A; TLIB3103A; TLIB3407B; TLIB4007B; TLIB4807B; TLIB5307B; TLIB5807B; TLIS2020A; TLIS507B; TLIS807B; TLIS907B;</p>

Version	Release Date	Authorisation	Comments
			TLIX1107B; TLIX1607B; UEPOPS234A; UEPOPS235A; UEPOPS236A
4 UEE07	31 July 2011	NQC	<p>New Qualifications</p> <p>Embedding of Sustainability Skills units into the core of the following qualifications: Modification of the following qualifications to comply with NQC Packaging Rules. Incorporation of Engineers Australia requirements for accreditation under the Dublin Accord</p> <p>New Qualifications UEE20110; UEE32110; UEE32210; UEE42710; UEE42810; UEE42910; UEE51110; UEE51210; UEE62210; UEE62310; UEE62410; UEE62510</p> <p>Deleted Qualifications UEE20107; UEE21810; UEE30510; UEE31307; UEE41310; UEE42310; UEE42510; UEE50610; UEE60110; UEE60710; UEE61910</p> <p>New Units</p> <p>Cross Discipline Units</p> <p>Amended Units UEENEEE011C</p> <p>New Units UEENEEE080A; UEENEEE081A; UEENEEE082A; UEENEEE083A; UEENEEE101A; UEENEEE102A; UEENEEE104A; UEENEEE105A; UEENEEE107A; UEENEEE125A; UEENEEE126A; UEENEEE137A;</p> <p>Electrical Units</p> <p>New Units UEENEEG006A; UEENEEG033A; UEENEEG063A; UEENEEG076A; UEENEEG101A; UEENEEG102A; UEENEEG103A; UEENEEG104A; UEENEEG105A; UEENEEG106A; UEENEEG107A; UEENEEG108A; UEENEEG109A; UEENEEG149A; UEENEEG171A;</p> <p>Electronic and Communications Units</p>

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			<p>New Units UEENEEH091A; UEENEEH092A</p> <p>Instrumentation Units</p> <p>New Units UEENEEI038A; UEENEEI040A; UEENEEI041A; UEENEEI042A; UEENEEI043A; UEENEEI044A;</p> <p>Refrigeration and Air Conditioning Units</p> <p>New Units UEENEEJ102A; UEENEEJ103A; UEENEEJ104A; UEENEEJ105A; UEENEEJ106A; UEENEEJ107A; UEENEEJ108A; UEENEEJ109A; UEENEEJ110A; UEENEEJ111A; UEENEEJ112A; UEENEEJ113A; UEENEEJ114A; UEENEEJ115A; UEENEEJ116A; UEENEEJ117A; UEENEEJ118A; UEENEEJ119A; UEENEEJ121A; UEENEEJ122A; UEENEEJ123A; UEENEEJ124A; UEENEEJ125A; UEENEEJ126A; UEENEEJ127A; UEENEEJ128A; UEENEEJ129A; UEENEEJ130A; UEENEEJ131A; UEENEEJ132A; UEENEEJ133A; UEENEEJ134A; UEENEEJ135A; UEENEEJ136A; UEENEEJ137A; UEENEEJ138A; UEENEEJ139A; UEENEEJ141A; UEENEEJ142A; UEENEEJ143A; UEENEEJ144A; UEENEEJ145A; UEENEEJ146A; UEENEEJ147A; UEENEEJ148A; UEENEEJ149A; UEENEEJ150A; UEENEEJ151A; UEENEEJ153A; UEENEEJ154A; UEENEEJ155A; UEENEEJ156A; UEENEEJ157A; UEENEEJ158A; UEENEEJ159A; UEENEEJ161A; UEENEEJ162A; UEENEEJ164A; UEENEEJ165A; UEENEEJ166A; UEENEEJ167A; UEENEEJ168A; UEENEEJ170A; UEENEEJ171A; UEENEEJ172A; UEENEEJ173A; UEENEEJ174A; UEENEEJ175A;</p>

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			UEENEEJ176A; UEENEEJ177A; UEENEEJ178A; UEENEEJ179A; UEENEEJ180A; UEENEEJ181A; UEENEEJ182A; UEENEEJ183A; UEENEEJ184A; UEENEEJ185A; UEENEEJ186A; UEENEEJ187A; UEENEEJ188A; UEENEEJ189A; UEENEEJ190A; UEENEEJ191A; UEENEEJ192A; UEENEEJ193A; UEENEEJ194A; UEENEEJ195A; UEENEEJ196A; Deleted Units UEENEEJ012B; UEENEEJ014B; UEENEEJ016B; UEENEEJ017B; UEENEEJ022B; UEENEEJ023B; UEENEEJ024B; UEENEEJ025B; UEENEEJ026B; UEENEEJ027B; UEENEEJ028B; UEENEEJ029B; UEENEEJ030B; UEENEEJ031B; UEENEEJ032B; UEENEEJ033B; UEENEEJ034B; UEENEEJ035B; UEENEEJ036B; UEENEEJ037B; UEENEEJ038B; UEENEEJ039B; UEENEEJ041B; UEENEEJ042B; UEENEEJ043B; UEENEEJ044B; UEENEEJ045B; UEENEEJ046B; UEENEEJ047B; UEENEEJ048B; UEENEEJ049B; UEENEEJ050B; UEENEEJ051B; UEENEEJ052B; UEENEEJ054B; UEENEEJ055B; UEENEEJ056B; UEENEEJ057B; UEENEEJ058B; UEENEEJ059B; UEENEEJ061B; UEENEEJ062B; UEENEEJ063B; UEENEEJ064B; UEENEEJ065B; UEENEEJ066B; UEENEEJ068B; UEENEEJ071B; UEENEEJ073B; UEENEEJ074A; UEENEEJ075A; UEENEEJ076B; UEENEEJ077A; UEENEEJ078A; UEENEEJ079A; UEENEEJ080A; UEENEEJ081A; UEENEEJ082A; UEENEEJ083A; UEENEEJ084A; UEENEEJ085A; UEENEEJ086A; UEENEEJ087A; UEENEEJ088A; UEENEEJ089A; UEENEEJ090A;

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			<p>UEENEEJ091A;</p> <p>Restricted Electrical Units</p> <p>New Units UEENEED012A; UEENEED017A; UEENEED024A; UEENEED025A; Deleted Units UEENEED009B</p> <p>Rail Signalling</p> <p>New Units UEENEEN021A</p> <p>Deleted Imported Units</p> <p>Rationalisation of Rail Signalling units from TLI07 TLIB5007B; TLIB5107B; TLIB5207B; TLIB5407B; TLIB5507B; TLIB5607B; TLIB5707B; TLIB5907B; TLIB6207B; TLIB6307B; TLIB6407B; TLIB6507B; TLIB6607B; TLIB6707B; TLIB6807B; TLIB6907B; TLIS1007B; TLIS1107B; TLIS707B</p> <p>Addition of the following Imported Units</p> <p>RIIRA1609A; RIIRIS601A; RIIOHS202A; RIIOHS205A; RIIOHS204A; CPCOHS10001A; HLTCPR201A; HLTFA301A; TLILIC508A ; TLID3507C; PRMPFES43A; MEM16006A; MEM16008A; MEM30001A; MEM30002A; MEM30003A; MEM30004A; MEM05012C; MEM05007C;</p> <p>Update of Existing Imported units</p> <p>BSBWOR502B; BSBMGT516C BSBSMB405A; ICTTEN3056A; ICTTEN5083A; ICTTEN4085A; ICTTEN4081A; ICTTEN3089A;</p>
3.1 UEE07	4 August 2010	EE-Oz ISC Upgrade Authorised by NQC to meet Packaging Rule requirements and the inclusion of Sustainability	<p>Modification of the following qualifications to comply with NQC Packaging Rules.</p> <p>UEE10110 Certificate I in Electrotechnology UEE20510 Certificate II in Computer Assembly and Repair UEE21310 Certificate II in Remote Area Essential Service UEE21610 Certificate II in Security Assembly and</p>

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		Skills in qualifications.	<p>Setup</p> <p>UEE21710 Certificate II in Technical Support</p> <p>UEE21910 Certificate II in Electronics</p> <p>UEE22010 Certificate II in Electrotechnology (Career Start)</p> <p>UEE30210 Certificate III in Computer Systems Equipment</p> <p>UEE30310 Certificate III in Custom Electronics Installations</p> <p>UEE30910 Certificate III in Electronics and Communications</p> <p>UEE40110 Certificate IV in Computer Systems</p> <p>UEE40710 Certificate IV in Electronics and Communications</p> <p>UEE41510 Certificate IV in Video and Audio Systems</p> <p>UEE50110 Diploma of Computer Systems Engineering</p> <p>UEE50510 Diploma of Electronics and Communications Engineering</p> <p>UEE60210 Advanced Diploma of Electronics and Communications Engineering</p> <p>UEE60410 Advanced Diploma of Computer Systems Engineering</p> <p>Modifications to qualification to meet NQC requirements include:</p> <p>Stream Core requirement deleted from the above qualifications and stream core units included in core or elective to maintain qualification integrity.</p> <p>Inclusion of provision for importation of up to one sixth of total qualification points from other qualifications, other Training Packages and accredited courses.</p> <p>Inclusion of one third of total qualification points as elective.</p> <p>Creation of an imported and common units group for each qualification.</p> <p>Creation of elective groups with specific qualification electives for each qualification.</p> <p>Application of a revised points weighting system for both core and elective units in each qualification.</p> <p>Embedding of Sustainability Skills units into the</p>

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			<p>core of the following qualifications:</p> <p>UEE10110; UEE20510; UEE21310; UEE21610; UEE21710; UEE21910 UEE22010; UEE30210; UEE30310 UEE30910; UEE40110; UEE40710; UEE41510; UEE50110; UEE50510; UEE60210; UEE60410</p> <p>Addition of the following Imported Units</p> <p>ICTTEN2207A Install and configure a home or small office network ICTTEN2208A Install and configure a small to medium business network ICTTEN2209A Build and maintain a secure network ICTTEN4210A Implement and troubleshoot enterprise routers and switches ICTTEN4211A Design, install and configure an internetwork ICTTEN4212A Apply advanced routing protocols to network design ICTTEN4213A Configure and troubleshoot advanced network switching ICTTEN4214A Install and maintain a wide area network</p>
<p>3 UEE07</p>	<p>11 June 2010</p>	<p>NQC</p>	<p>This review includes amendments to the UEE07 Electrotechnology Training Package as follows:</p> <p>Amendments to competency standard units: UEENEEE019C, UEENEEE024C, UEENEEE048C, UEENEEH072C, UEENEEI007C, UEENEEI008C, UEENEEG072C (refer Vol 2, Part 2.1. and Table 2, Vol 2, Part 2), encompassing amendments to:</p> <p>Application of unit essential knowledge and skills clauses within the Cross Discipline (E) units Concurrent assessment and relationship with other units</p> <p>Due to the requirement for amendments to Prerequisites (and, consequently Prerequisite chains) Application of the unit essential knowledge and skills clauses</p>

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			<p>correction to wording in range statement.</p> <p>3. Hazardous Areas Units -Deletion of the following competency standard units due to amendments in the endorsed titles UEENEEM001B; UEENEEM002B, UEENEEM003B, UEENEEM004B, UEENEEM005B, UEENEEM006B, UEENEEM007B, UEENEEM008B, UEENEEM009B, UEENEEM010B, UEENEEM011B, UEENEEM012B, UEENEEM013B, UEENEEM014B, UEENEEM015B, UEENEEM016B, UEENEEM017B, UEENEEM018B</p> <p>The deleted competency standard units have been replaced with the following new competency standard units for Hazardous Areas (refer Vol 1, Part 1 and Vol 2, Part 2.1M); namely: UEENEEM019A, UEENEEM020A, UEENEEM021A, UEENEEM022A, UEENEEM023A, UEENEEM024A, UEENEEM025A, UEENEEM026A, UEENEEM027A, UEENEEM028A, UEENEEM029A, UEENEEM030A, UEENEEM031A, UEENEEM032A, UEENEEM033A, UEENEEM034A, UEENEEM035A, UEENEEM036A, UEENEEM037A, UEENEEM038A, UEENEEM039A, UEENEEM040A, UEENEEM041A, UEENEEM042A, UEENEEM043A, UEENEEM044A, UEENEEM045A, UEENEEM046A, UEENEEM047A, UEENEEM048A, UEENEEM049A, UEENEEM050A, UEENEEM052A, UEENEEM053A, UEENEEM054A, UEENEEM055A, UEENEEM056A, UEENEEM057A, UEENEEM058A, UEENEEM059A, UEENEEM060A, UEENEEM061A, UEENEEM062A, UEENEEM063A, UEENEEM064A, UEENEEM065A, UEENEEM066A, UEENEEM067A, UEENEEM068A, UEENEEM069A, UEENEEM070A, UEENEEM071A, UEENEEM072A, UEENEEM073A,</p>

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			<p>UEENEEM074A, UEENEEM075A, UEENEEM076A, UEENEEM077A, UEENEEM078A, UEENEEM079A, UEENEEM080A</p> <p>These units provide coverage of endorsements in the unit titles .e.g. coal mining. These contained re-numbered Hazardous Areas essential knowledge and skills clauses</p> <p>4. Refrigeration and Air Conditioning Units Deletion of one unit UEENEEJ060B. Replaced by new unit UEENEEJ089A Addition of seventeen (17) new competency standard units for Refrigeration and Air Conditioning (refer Vol 1, Part 1 and Vol 2, Part 2.1); namely; UEENEEJ074A; UEENEEJ075A, UEENEEJ076A; UEENEEJ077A, UEENEEJ078A; UEENEEJ079A, UEENEEJ080A; UEENEEJ081A, UEENEEJ082A; UEENEEJ083A, UEENEEJ084A; UEENEEJ085A, UEENEEJ086A; UEENEEJ087A, UEENEEJ088A; UEENEEJ090A; UEENEEJ091A,</p> <p>5. Remote Areas and Renewable Energy Units Deletion of three (3) units: UEENEEK015B,UEENEEK024B, UEENEEK041B Replaced by Units: UEENEEK049A, UEENEEK050A, UEENEEK051A, Addition of two (2) new competency standard unit for Renewable and Sustainable Energy areas (refer Vol 1, Part 1 and Vol 2, Part 2.1); namely; UEENEEK016A; UEENEEK047A,</p> <p>Deletion of two (2) competency standard units for Renewable and Sustainable Energy Areas; namely; UEENEEK018B and UEENEEK019B – imported units for the Water Industry Training Package will cover the deleted units. (refer Vol 1, Part 1 and Vol 2, Part 2.1K)</p> <p>6. Electrical Units</p>

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			<p>Deletion of three (3) units: UEENEEE040B, UEENEEF001B, UEENEEG014B, These units have been replaced by the new units: UEENEEE079A, UEENEEF016A, UEENEEG075A, (refer Vol 2, Part 2.1. and Table 2, Vol 2, Part 2).</p> <p>7. Instrumentation and Industrial Control Units</p> <p>Addition of one (1) new competency standard unit for Instrumentation and Industrial Control areas: UEENEEE084A; (refer Vol 1, Part 1 and Vol 2, Part 2.1)</p> <p>8. Electronic and Communications Units</p> <p>Addition of one (1) new competency standard unit for Electronics and Communications areas: UEENEEH090A.</p> <p>9. Hazardous Area qualifications</p> <p>Amendments to Hazardous Area qualifications (refer Vol 1, Part 1 and Table 1, Vol, Part 1), encompassing: qualification structures amendments stemming from changes made to units and Prerequisites comprising the qualifications. The qualifications affected include: Revised Qualifications - UEE31710; UEE31810; UEE31910; UEE61210 Deleted Qualifications UEE41807 New Qualifications UEE42410, UEE42610, UEE61410</p> <p>10. Refrigeration and Air conditioning qualifications</p> <p>Amendments to Refrigeration and Air conditioning qualifications (refer Vol 1, Part 1 and Table 1, Vol, Part 1), encompassing: qualification structures</p>

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			<p>amendments stemming from changes made to units and Prerequisites comprising the qualifications.</p> <p>The qualifications affected include</p> <p>Revised Qualifications UEE21810, UEE30510, UEE40510, UEE41310, UEE50310, UEE50610, UEE60710,</p> <p>Deleted Qualifications UEE41407, UEE60807,</p> <p>New Qualifications UEE42310, UEE42510, UEE61910,</p> <p>11 Industrial Instrumentation and Control qualifications Amendments to Industrial Instrumentation and Control qualifications (refer Vol 1, Part 1 and Table 1, Vol, Part 1), encompassing: qualification structures amendments stemming from changes made to units and Prerequisites comprising the qualifications. The qualifications affected include: Revised Qualifications UEE31210, UEE40410, UEE40910, UEE50210, UEE50910, UEE60610, New Qualifications UEE42210, UEE51010, UEE61510,</p> <p>12. Electronics, Communications and Computer Systems qualifications Amendments to Electronics, Communications and Computer Systems qualifications (refer Vol 1, Part 1 and Table 1, Vol, Part 1), encompassing: qualification structures amendments stemming from changes made to units and Prerequisites comprising the qualifications. The qualifications affected include: Revised Qualifications UEE30310, UEE30910, UEE40110, UEE40710, UEE41510, UEE50110, UEE50510, UEE60210, UEE60410, Deleted Qualifications UEE60307, UEE60507, New Qualifications UEE61710, UEE61810,</p>

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			<p>13. Remote Areas and Renewable Energy qualifications Amendments to Renewable Energy qualifications (refer Vol 1, Part 1 and Table 1, Vol, Part 1), encompassing: qualification structures amendments stemming from changes made to units and Prerequisites comprising the qualifications. The qualifications affected include: Revised Qualifications UEE21310, UEE21510, UEE32010, UEE41610, UEE41010, UEE41910, UEE42010, UEE50710, UEE60910, Deleted Qualifications UEE61007, New Qualifications UEE62010,</p> <p>14. Electrical qualifications Amendments to Electrical qualifications (refer Vol 1, Part 1 and Table 1, Vol, Part 1), encompassing: qualification structures amendments stemming from changes made to units and Prerequisites comprising the qualifications. The qualifications affected include: Revised Qualifications UEE10110, UEE21610, UEE22010, UEE31410, UEE40210, UEE40310, UEE40610, UEE40810, UEE41110, , UEE50410, UEE50810, UEE60110, UEE61110, Deleted Qualifications UEE61307 New Qualifications UEE20810, UEE42110, UEE62110</p> <p>15. Rail Signalling qualifications Amendments to Electrical qualifications (refer Vol 1, Part 1 and Table 1, Vol, Part 1), encompassing: qualification structures amendments stemming from changes made to units and Prerequisites comprising the qualifications. The qualifications affected include: UEE41710, UEE41210</p>

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			<p>16. All Qualifications – All pre-requisite competencies required to complete core competencies are explicitly included in core of the relevant qualification.</p> <p>17. The following Imported Units have been added to UEE07 Version 3. NWP209B ; NWP218B ; NWP226B ; NWP227B ; NWP229B ; NWP243B ; NWP245B ; NWP247A ; NWP253B ; NWP255B ; NWP256B ; NWP257B ; NWP259B ; NWP260A ; NWP261A; NWP262A ; NWP263A; NWP268B ; TLIB3407B; TLIB4007B; TLIB4807B; TLIB5007B; TLIB5107B; TLIB5207B; TLIB5307B; TLIB5407B; TLIB5507B; TLIB5607B; TLIB5707B; TLIB5807B; TLIB5907B; TLIB6207B; TLIB6307B; TLIB6407B; TLIB6507B; TLIB6607B; TLIB6707B; TLIB6807B; TLIB6907B; TLIS507B; TLIS707B; TLIS1007B; TLIS1107B; TLIS807B; TLIS907B; TLIX1107B; TLIX1607B;</p> <p>18. The following imported units have been undated to the latest version from the parent Training Package. BSBSMB405A; BSBINM501A; BSBINM502A; BSBMGT502B; ICTTC056D; ICTTC083D; ICTTC085D; ICTTC088D; ICTTC089D; UETTDRI04B; MSACMS200A; MSACMT220A MSACMT221A; MSACMT240A MSACMT280A; MSACMT281A Inclusion of Skill Sets for Energy Efficiency as follows: Energy Efficiency Auditor Identify of Energy Efficiency Strategies Energy Efficiency Systems Developer Energy Efficiency Systems Designer Energy Efficiency Systems Integration Inclusion of existing units in Electives Schedules: Added to Schedule 3 Electives: UEENE002B Schedule 3 Strand 2 UEENE003B Schedule 3 Strand 1</p>
2	12	NQC	This review includes amendments to the UEE07

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UEE07	August 2009		<p>Electrotechnology Training Package as follows:</p> <p>Qualifications</p> <p>One new qualification UEE42010 Certificate IV in Electrical – Photovoltaic Systems Units in UEE42010 Certificate IV in Electrical – Photovoltaic Systems include:</p> <p>New Unit</p> <p>UEENEEK048A Install, configure and commission grid connected photovoltaic power systems This unit was developed to address the requirements for commercial and domestic installations to meet the provisions of new Australian Government Renewable Energy initiatives and the requirements for Clean Energy Council accreditation for installers and/or designers of grid connected solar systems.</p> <p>Modified units</p> <p>UEENEEK025C Solve basic problems in photovoltaic energy apparatus UEENEEK035C Design grid connected power supply systems These units have been modified to address the requirements for commercial and domestic installations to meet the provisions of new Australian Government Renewable Energy initiatives and the requirements for Clean Energy Council accreditation for installers and/or designers of grid connected solar systems. UEENEEG071C Install and setup interval metering</p> <p>Skills Sets</p> <p>Post Trade Skill Sets have been identified for:</p> <ul style="list-style-type: none"> • Installer of grid connected photovoltaic systems • Designer of grid connected photovoltaic systems • Designer and Installer of grid connected photovoltaic systems <p>These Skill Sets have been designed to meet or exceed the requirements of the Clean Energy Council accreditation for Installer and/or designer of grid connected solar systems</p>

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1 UEE07	8 March 2008	NQC	<p>This review includes amendments to the UEE07 Electrotechnology Training Package as follows:</p> <p>Amendments to Electronics and Computer Systems AQF 2 to 6 competency standard units with special emphasis on AQF 5 and 6 (refer Vol 2, Part 2.1H. Vol 2, Part 2.1D and Table 2, Vol 2, Part 2), encompassing amendments to:</p> <ul style="list-style-type: none"> unit structures Prerequisites (and, consequently Prerequisite chains) essential knowledge and skills clauses within the Electronics (H) and Computer Systems (D) discipline units <p>Amendments to Electronics and Computer systems qualifications (refer Vol 1, Part 1 and Table 1, Vol, Part 1), encompassing:</p> <ul style="list-style-type: none"> qualification structures amendments stemming from changes made to units and Prerequisites comprising the qualifications. <p>The qualifications affected include:</p> <ul style="list-style-type: none"> UEE20507 Certificate II in Computer Assembly and Repair UEE20907 Certificate II in Electronic Assembly UEE21907 Certificate II in Electronics UEE30207 Certificate III in Computer Systems Equipment UEE30307 Certificate III in Custom Electronics Installations UEE30507 Certificate III in Appliance Servicing UEE30907 Certificate III in Electronics and Communications UEE31107 Certificate III in Gaming Electronics UEE40107 Certificate IV in Computer Systems UEE40707 Certificate IV in Electronics and Communications UEE50907 Diploma of Industrial Electronics and Control 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

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			<p>Electronics and Control Engineering Amendment of unit Prerequisites (refer Table 2, Vol 1, Part 2 and all Vol 2, Part 2.1) Amendment of the Regulatory/ Context of Assessment section in the Assessment Guidelines (refer Vol 1, Part 3) and the ‘Critical Aspects of Evidence’ section in each unit to better reflect jurisdictional regulatory requirements. Addition of two (2) new qualifications and related competency standard units for Renewable Energy (refer Vol 1, Part 1 and Vol 2, Part 2.1K); namely; UEE32007 Certificate III in Renewable Energy – ELV UEE41907 Certificate IV in Electrical – Renewable Energy Removal of ‘UEENEEK025A Solve basic problems in photovoltaic energy apparatus’ from core of UEE21507 Certificate II in Renewable Energy (refer Vol 1, Part 1) Inclusion of competency standard unit ‘UEENEEK042A Participate in environmentally sustainable work practices’ in the Stream Core of all Certificate II and Certificate III qualifications (refer Vol 1, Part 1) Inclusion of competency standard unit ‘UEENEEK045A Implement & monitor, policies & procedures for environmentally sustainable electrotech work practice’ in the Stream Core of all Certificate IV qualifications (refer Vol 1, Part 1) Inclusion of four new competency standard units for Renewable Energy and Sustainable Energy: UEENEEK042A; UEENEEK043A, UEENEEK045A, UEENEEK046A Amendment of EKAS alignments in competency standard unit ‘UEENEEP001B Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply’ (Refer Vol 2, Part 2.1P) Importation of Competitive Manufacturing units: MCMS200A; MCMT220A; MCMT221A; MCMT240A; MCMT280A; MCMT281A (Refer Table 4, Vol 1, Part 2 for list of imported units & Vol 2, Part 2.1L for units) Incorporation of revised Mandatory text to ensure</p>

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			<p>compliance with the November 2006 version of the Training Package Development Handbook (Refer all mandatory text sections in both Volumes)</p> <p>Revision of Unit Structures to ensure compliance with the November 2006 version of the Training Package Development Handbook (refer Vol 2, Part 2.1), including:</p> <p>Removal of all spaces within unit codes</p> <p>Addition of '1.1 Descriptor' as a new title</p> <p>Relocation of '3.1 License to practise' to position 1.2</p> <p>Relocation of the sub-heading '2.1 Competencies' from the left hand column to the right hand column</p> <p>Relocation of the sub-heading '2.2 Literacy and Numeracy skills' from the left hand column to the right hand column</p> <p>Inclusion of the statement "For the full prerequisite chain details for this unit please refer to Table 2 in Volume 1, Part 2" in 2.1 Competencies</p> <p>Removal of all guidance text from 2) Prerequisite Unit(s), with the exception of the 'M' Hazardous Areas units</p> <p>Inclusion of '3) Employability Skills' and the statement "The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements." as a whole new section</p> <p>Revision of the numbering of all subsequent sections to accommodate the inclusion of the Employability Skills section at 3)</p> <p>Inclusion of the statement "All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies" as a new paragraph in '7) Required Skills and Knowledge'</p> <p>Changing of the number '7' in paragraph "Solve problems in complex polyphase power circuits as described in 7) and including:" in section 9.2 of the unit to 8.</p> <p>Complete removal of the 'Key Competencies' and</p>

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			<p>‘Skills Enabling Employment’ sections.</p> <p>Inclusion in of Employability Skills statement tables for all Qualifications (refer Volume 1, Part 1)</p> <p>Inclusion of full Prerequisite chain details for each unit (refer Table 2, Volume 1, Part 2).</p> <p>Technical and ‘Plain English’ edit of entire Training Package including minor editorial amendments across Training Package to correct spelling, grammatical and typographical errors.</p> <p>Amendment of all publishing-related information to UEE07, including; title pages, headers, footers, copyright statements, Training Package, qualification codes.</p> <p>Amendment of all unit codes to ‘UEENEE---B’. This is with the exception of the new units listed above, which have been coded ‘UEENEE---A’.</p> <p>Removal of the following text from units UEENEEM002B, UEENEEM004B, UEENEEM006B, UEENEEM007B, UEENEEM008B, UEENEEM009B, UEENEEM010B, UEENEEM011B, UEENEEM012B, UEENEEM014B, UEENEEM016B, UEENEEM017B, “The endorsement(s) for each explosion-protection technique is designated with an [Ex] as a suffix to the unit title”.</p> <p>Removal of the definition of ‘pre-requisite’ from Volume 1, Part 1, page 63.</p> <p>Revision of text within the following sections to ensure currency and accuracy:</p> <p>Volume 1, Preliminary Information, Industry Coverage, Page 17.</p> <p>Volume 1, Part 1, Page 4.</p> <p>Volume 1, Part 1, Pages 42.</p> <p>Volume 1, Part 2, Page 236.</p> <p>Volume 1, Part 3, Appendix A.</p> <p>Volume 1, Part 3, Guide to Assessment Methods Table.</p> <p>Volume 1, Part 1, Qualifications Framework, Schedule of Electives.</p> <p>Replacement of all references to ‘Skills Clusters’ with ‘Skills Sets</p> <p>Replacement of all references to ‘prerequisites’ with ‘pre-requisites’</p>

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			<p>22. Improved consistency of Volume 1, Part 3, Assessment Guidelines with Units via replacing ‘be consistent with the approved industry simulation policy’ with ‘be in accordance with industry and regulatory policy’.</p> <p>23. Inclusion of ‘Schedule 6’ in the Elective Statement of the Packaging rules for UEE60207 Advanced Diploma of Electronics and Communications Engineering and UEE60407 Advanced Diploma of Computer Systems Engineering.</p>

Preliminary Information

Preliminary Information

The Electrotechnology Industry

The Electrotechnology industry is responsible for harnessing electricity to meet a huge variety of businesses and individual applications; ranging from traditional light and power to hardware platforms, networking automation, virtual enterprise, the internet and fibreoptics. It can truly be said that electrotechnology skills underpin the operation of the other industry sectors and the capacity of Australians to enjoy leisure activities.

Electrotechnology workers operate in an environment characterised by procedural regulation and occupational health and safety compliance. As the work is inherently dangerous, workers are expected to demonstrate high levels of competency, flexibility and capability across a wide range of equipment, technologies, processes and procedures. Workers are also expected to conduct continuous development of their knowledge and skills throughout their working life, in order to remain abreast of evolving technological and compliance related requirements.

In addition to their traditional role in facilitating work and play, workers in the electrotechnology industry will play an integral role in facilitating the transformation of the Australian economy in two important regards; both necessary to ensure its continued global competitiveness.

The first relates to the spread of new information processing and communication technologies, prime amongst these being the National Broadband Network (NBN). The NBN is the largest infrastructure project in the nation's history and will require an average of 25,000 local workers each year, during its eight year development period. Subsequently, improved communications infrastructure will support greater automation and industrial control technologies, allowing business and homes to use energy more intelligently, efficiently and effectively. Realising the full benefits of the NBN will require an electrotechnology workforce with higher level skills, increasing operating as dual ICT professionals.

The second relates to Australia's shift from a high carbon present toward a low carbon future. As community and business acceptance of the importance of effective and efficient energy usage grows, energy sector employees will be key disseminators of strategies and technologies for energy efficiency to all manner of end users, from business and government to individuals.

At the vanguard of this effort will be workers trained in monitoring, managing and measuring energy use based on effective assessment and data analysis. Coordinating and managing energy networks will drive demand for smart grids, automation and instrumentation technology, all of which will increase demand for post-trade electrical skills.

Moving to a more energy conscious future will also require electricians trained in auditing and reporting techniques, such as those required to calculate obligations under a carbon tax or emissions trading scheme.

As homes, communities and organisations become more energy conscious, investing in energy efficiency strategies and actively monitoring their usage patterns, not to mention industry's greater reliance on instrumentation and industrial control techniques to drive new technology, demand for electrotechnology skills will increase.

Meeting these challenges will come on top of the industry's traditional mandate of ensuring that all Australian homes and businesses are able to utilise electricity effectively to address their needs. Developing the capacity to address each of these should be the industries top priority and will require a concerted training effort.

The industry:

- employs approximately 600,000 people, including approximately 170,000 in communication; 142,000 in installation trade services; 100,000 in construction and building maintenance; 25,000 electrical and electronic engineers; and 163,000 computer professionals (repair and servicing)
- covers more than 80 Qualifications from Certificate I through to Advanced Diploma.
- Occupations include; Electrician, Electrical Fitter, Electrical Mechanic, Electronics Technician, Communications Technician, Computer System Technician, Refrigeration and Air Conditioning Mechanic, Information Technology Technician, Instrumentation Technician, Data and voice Technician, and Telecommunications Technician. Often encompassing Licensing, Registration, Sustainable Energy certification, career paths or pathways, apprenticeships, training plans and agreements, and the completion of training and assessment processes to confirm competence by registered training organisations.

Industry Coverage

The Industry of ElectroComms (Electrotechnology-Communications) covers electronics, electrical, communications, control systems, instrumentation, lifts, refrigeration and air conditioning, and renewable/sustainable energy, fire and security, appliances, gaming and rail. The industry may also include some common technologies typically relevant to parts of telecommunications, data, and information technology and computing.

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

The Electrotechnology group of skills does not coincide precisely with any of the Australian Bureau of Statistics (ABS) industries defined under the Australian and New Zealand Standard Industrial Classification (ANZSIC). There are several classes (4-digit ANZSIC) where the Electrotechnology skills predominate but there are also skilled Electrotechnology workers distributed across almost all industries. The industry sector that covers the largest group of electrical and electronic workers is the 'Installation trade services' (ANZSIC 423) group within the major industry division of construction. Additionally, a significant number of Electrotechnology workers are employed in the Telecommunications Industry.

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

Typical groups represented are as follows:

- 2125 Electrical and Electronics Engineers
- 2128-15 Electrical or Electronics Engineering Technologist
- 3123 Electrical Engineering Associate Professionals
- 3124 Electronic Engineering Associate Professionals
- 3294 Computing Support Technicians
- 4311 Electricians
- 4312 Refrigeration and Air-conditioning Mechanics
- 4313 Electrical Distribution Tradespersons
- 4314 Electronic Instrument Tradespersons
- 4315 Electronic and Office Equipment Tradespersons
- 4316 Communications Tradespersons
- 4992-17 Broadcast Transmitter Operator
- 9212 Product Assemblers
- 9918 Electrical and Telecommunications Trades Assistants

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

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

Also represented are the following specific ANZSIC codes:

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

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

It is recognised that other training pathways may exist.

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

Regulatory arrangements

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

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

Statutes, regulations and codes of practice

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

Other Industry Standards

It is recognised that the Electrotechnology Standards do not cover all the competencies, likely to be required and applied within Electrotechnology Industry workplaces. Nationally endorsed competency standards from other industries will be used where appropriate and the concept of cross-industry disciplinary standards will be encouraged. Specific rules have been included within this Training Package to address these arrangements.

Overview

Overview

What is a Training Package?

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

Each Training Package:

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

How do Training Packages fit within the National Skills Framework?

The National Skills Framework applies nationally, is endorsed by the Ministerial Council for Vocational and Technical Education, and comprises the Australian Quality Training Framework 2010 (AQTF 2010), and Training Packages endorsed by the National Quality Council (NQC).

How are Training Packages developed?

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

How do Training Packages encourage flexibility?

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

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

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

Who can deliver and assess using Training Packages?

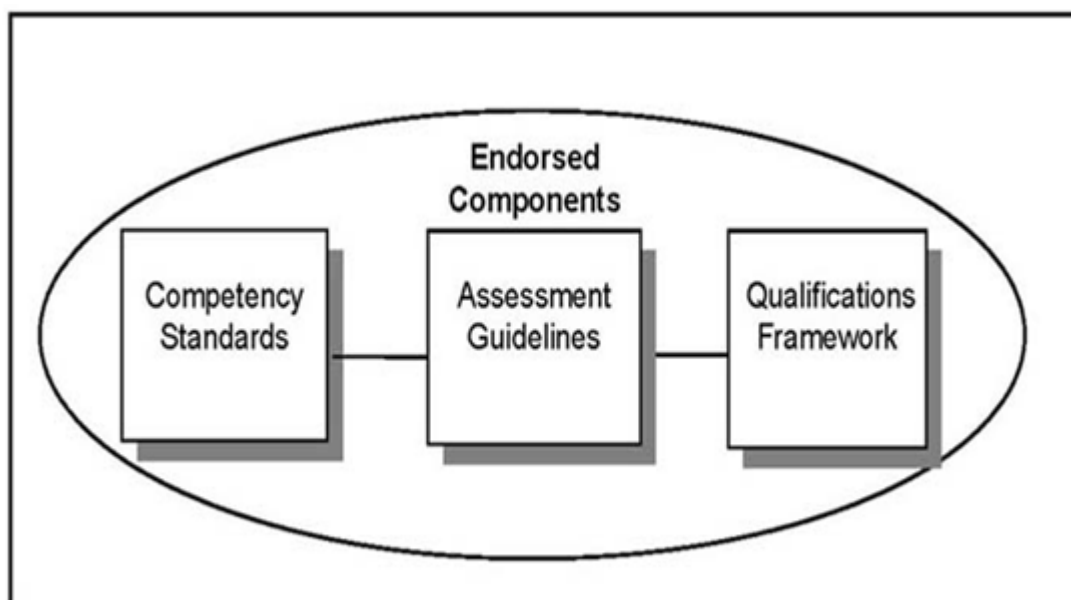
Training and assessment using Training Packages must be conducted by a Registered Training Organisation (RTO) that has the qualifications or specific units of competency on its scope of registration, or that works in partnership with another RTO, as specified in the AQTF 2010.

Training Package Components

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

Training Package Endorsed Components

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



Competency Standards

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

Assessment Guidelines

The Assessment Guidelines provide an industry framework to ensure all assessments meet industry needs and nationally agreed standards as expressed in the Training Package and the AQTF 2010. The Assessment Guidelines must be followed to ensure the integrity of assessment leading to nationally recognised qualifications.

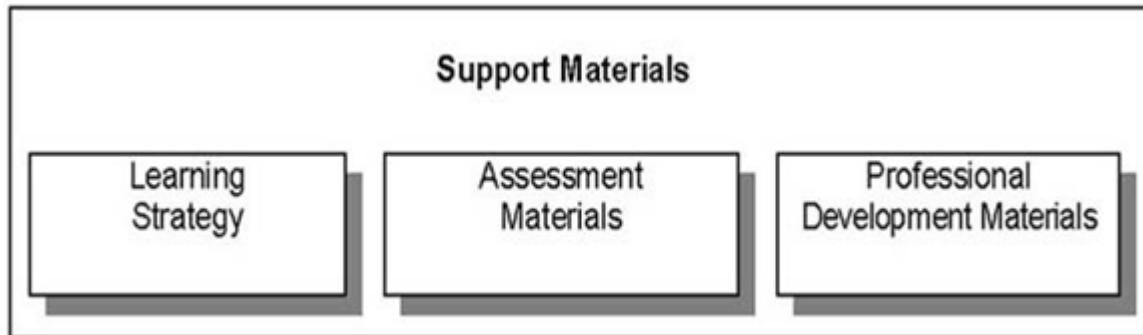
Qualifications Framework

Each Training Package provides details of those units of competency that must be achieved to award AQF qualifications. The rules around which units of competency can be combined to make up a valid AQF qualification in the Training Package are referred to as the 'packaging rules'. The packaging rules must be followed to ensure the integrity of nationally recognised qualifications issued.

Training Package Support Materials

The endorsed components of Training Packages are complemented and supported by optional support materials that provide for choice in the design of training and assessment to meet the needs of industry and learners.

Training Package support materials can relate to single or multiple units of competency, an industry sector, a qualification or the whole Training Package. They tend to fall into one or more of the categories illustrated below.



Training Package support materials are produced by a range of stakeholders such as RTOs, individual trainers and assessors, private and commercial developers and Government agencies.

Training Package, Qualification and Unit of Competency Codes

There are agreed conventions for the national codes used for Training Packages and their components. Always use the correct codes, exactly as they appear in the Training Package, and with the code always before the title.

Training Package Codes

Each Training Package has a unique five-character national code assigned when the Training Package is endorsed, for example XYZ08. The first three characters are letters identifying the Training Package industry coverage and the last two characters are numbers identifying the year of endorsement.

Qualification Codes

Within each Training Package, each qualification has a unique eight-character code, for example UEE30111.

- the first three letters identify the Training Package
- the first number identifies the qualification level
- the next two numbers identify the position in the sequence of the qualification at that level. That is, in the case of UEE30111, it is the first AQF 3 qualification in the Training Package Note that this due to deletions and revisions this sequence may not always be complete.
- the last two numbers identify the year in which the qualification was endorsed. Where qualifications are added after the initial Training Package endorsement, the last two numbers may differ from the other Training Package qualifications as they identify the year in which those particular qualifications were endorsed.

Unit of Competency Codes

Within each Training Package, each unit of competency has a unique code. Unit of competency codes are assigned when the Training Package is endorsed, or when new units of competency are added to an existing endorsed Training Package. Unit codes are developed as follows:

- a typical code is made up of 12 characters, normally a mixture of uppercase letters and numbers, as in UEENEEH124A
- the first three characters signify the Training Package – UEE11 Electrotechnology Training Package – in the above example and up to eight characters, relating to an industry sector, function or skill area, follow;
- the last character is always a letter and identifies the unit of competency version. An ‘A’ at the end of the code indicates that this is the original unit of competency. ‘B’, or another incremented version identifier means that minor changes have been made. Typically this would mean that wording has changed in the range statement or evidence guide, providing clearer intent; and
- where changes are made that alter the outcome, a new code is assigned and the title is changed.
- In this Training Package the following approach has been adopted:

Unit Number											
U	E	E	N	E	E	H	1	2	4	A	
Industry - EE-Oz Training Standards identifier											Training Package identifier
12 Characters Maximum											

Training Package, Qualification and Unit of Competency Titles

There are agreed conventions for titling Training Packages and their components. Always use the correct titles, exactly as they appear in the Training Package, and with the code always placed before the title.

Training Package Titles

The title of each endorsed Training Package is unique and relates the Training Packages broad industry coverage.

Qualification Titles

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

- first, the qualification is identified as either Certificate I, Certificate II, Certificate III, Certificate IV, Diploma, Advanced Diploma, Vocational Graduate Certificate, or Vocational Graduate Diploma;
- this is followed by the words ‘in’ for Certificates I to IV, and ‘of’ for Diploma, Advanced Diploma, Vocational Graduate Certificate and Vocational Graduate Diploma;
- then, the industry descriptor, for example Telecommunications; and

- then, if applicable, the occupational or functional stream in brackets, for example (Computer Systems).

For example:

UEE22111 Certificate II in Electrotechnology (Career Start).

Unit of Competency Titles

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

For example:

- UEENEED101A Use computer applications relevant to a workplace
- UEENEEE101A Apply Occupational Health Safety regulations, codes and practices in the workplace

The Electrotechnology Industry Training Package

The Electrotechnology Training Package

This Training Package for the Electrotechnology Industry (UEE11) has been developed on behalf of the ElectroComms Industries and community stakeholders from all States/Territories of Australia by EE-Oz Training Standards, with the support of the Australian National Training Authority (ANTA) and subsequently, the Department of Education, Employment and Workplace Relations (DEEWR). EE-Oz Training Standards operates under a charter from DEEWR as the declared National ElectroComms and EnergyUtilities Industry Skills Council for the ElectroComms and EnergyUtilities Industry. ElectroComms Industry practitioners, regulators, government agencies and community stakeholders contributed much effort, support and knowledge to its development.

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

In its revised form the Electrotechnology Training Package has gone even further in improving currency and relevance to industry by enhancing the range of qualifications and competency standard units available with added flexibility for the industry. It includes an array of new and revised competency standard units, pathways and design features.

The previous competency standard units have been revamped, reorganised and updated to over 600 competency standard units across all six vocational education and training levels of the AQF. The result is a Training Package that is more relevant to the industry. It readily responds to the needs and responsibilities of the future, both in technology and work organisation.

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

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

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

Table 1 - AQF qualifications in the Electrotechnology Training Package

AQF	Code	Title
1	UEE10111	Certificate I in ElectroComms Skills
2	UEE20111	Certificate II in Split Air-conditioning and Heat Pumps Systems
2	UEE20411	Certificate II in Winding and Assembly
2	UEE20511	Certificate II in Computer Assembly and Repair
2	UEE20711	Certificate II in Data and Voice Communications
2	UEE20811	Certificate II in Electrical Wholesaling
2	UEE20911	Certificate II in Electronic Assembly
2	UEE21011	Certificate II in Fire Alarms Servicing
2	UEE21211	Certificate II in Antennae Equipment
2	UEE21311	Certificate II in Remote Area Essential Service
2	UEE21411	Certificate II in Remote Area Power Supply Maintenance
2	UEE21611	Certificate II in Security Assembly and Set-up
2	UEE21711	Certificate II in Technical Support
2	UEE21911	Certificate II in Electronics

2	UEE22011	Certificate II in Electrotechnology (Career Start)
2	UEE22111	Certificate II in Sustainable Energy (Career Start)
3	UEE30111	Certificate III in Business Equipment
3	UEE30211	Certificate III in Computer Systems Equipment
3	UEE30311	Certificate III in Custom Electronics Installations
3	UEE30411	Certificate III in Data and Voice Communications
3	UEE30611	Certificate III in Electrical Machine Repair
3	UEE30711	Certificate III in Switchgear and Controlgear
3	UEE30811	Certificate III in Electrotechnology Electrician
3	UEE30911	Certificate III in Electronics and Communications
3	UEE31011	Certificate III in Fire Protection Control
3	UEE31111	Certificate III in Gaming Electronics
3	UEE31211	Certificate III in Instrumentation and Control
3	UEE31411	Certificate III in Security Equipment
3	UEE31511	Certificate III in Rail – Communications and Networks
3	UEE32011	Certificate III in Renewable Energy - ELV
3	UEE32111	Certificate III in Appliance Service
3	UEE32211	Certificate III in Air-conditioning and Refrigeration
3	UEE33011	Certificate III in Electrical Fitting
4	UEE40111	Certificate IV in Computer Systems
4	UEE40211	Certificate IV in Electrical – Data and Voice Communications
4	UEE40311	Certificate IV in Installation Inspection and Audits
4	UEE40411	Certificate IV in Electrical – Instrumentation
4	UEE40511	Certificate IV in Electrical – Air-conditioning Split Systems
4	UEE40611	Certificate IV in Electrotechnology – Systems Electrician

4	UEE40711	Certificate IV in Electronics and Communications
4	UEE40811	Certificate IV in Electrical – Fire Protection Control Systems
4	UEE40911	Certificate IV in Industrial Electronics and Control
4	UEE41011	Certificate IV in Energy Management and Control
4	UEE41111	Certificate IV in Electrical – Lift Systems
4	UEE41211	Certificate IV in Electrical – Rail Signalling
4	UEE41511	Certificate IV in Video and Audio Systems
4	UEE41611	Certificate IV in Renewable Energy
4	UEE41711	Certificate IV in Rail – Communications and Network Systems
4	UEE41911	Certificate IV in Electrical – Renewable Energy
4	UEE42011	Certificate IV in Electrical – Photovoltaic systems
4	UEE42111	Certificate IV in Electrotechnology – Electrical Contracting
4	UEE42211	Certificate IV in Instrumentation and Control
4	UEE42611	Certificate IV in Hazardous areas - Electrical
4	UEE42711	Certificate IV in Air-conditioning and Refrigeration Servicing
4	UEE42811	Certificate IV in Air-conditioning Systems Energy Management and Control
4	UEE42911	Certificate IV in Refrigeration and Air-conditioning Systems
4	UEE43011	Certificate IV in Electrical Equipment and Systems
4	UEE43111	Certificate IV in Energy Efficiency and Assessment
4	UEE43211	Certificate IV in Industrial Automation and Control
5	UEE50111	Diploma of Computer Systems Engineering
5	UEE50211	Diploma of Electrical and Instrumentation
5	UEE50311	Diploma of Electrical and Refrigeration and Air-conditioning
5	UEE50411	Diploma of Electrical Engineering
5	UEE50511	Diploma of Electronics and Communications Engineering

5	UEE50711	Diploma of Renewable Energy Engineering
5	UEE50811	Diploma of Research and Development
5	UEE50911	Diploma of Industrial Electronics and Control Engineering
5	UEE51011	Diploma of Instrumentation and Control Engineering
5	UEE51111	Diploma of Engineering Technology - Refrigeration and Air-conditioning
5	UEE51211	Diploma of Air-conditioning and Refrigeration Engineering
5	UEE53011	Diploma of Electrical Systems Engineering
6	UEE60211	Advanced Diploma of Electronics and Communications Engineering
6	UEE60411	Advanced Diploma of Computer Systems Engineering
6	UEE60611	Advanced Diploma of Industrial Electronics and Control Engineering
6	UEE60911	Advanced Diploma of Renewable Energy Engineering
6	UEE61111	Advanced Diploma of Automated Systems Maintenance Engineering
6	UEE61211	Advanced Diploma of Engineering – Explosion protection
6	UEE61511	Advanced Diploma of Instrumentation and Control Engineering
6	UEE61711	Advanced Diploma of Engineering Technology - Electronics
6	UEE61811	Advanced Diploma of Engineering Technology - Computer Systems
6	UEE62011	Advanced Diploma of Engineering Technology - Renewable Energy
6	UEE62111	Advanced Diploma of Engineering Technology - Electrical
6	UEE62211	Advanced Diploma of Electrical - Engineering
6	UEE62311	Advanced Diploma of Electrical Engineering – Coal Mining
6	UEE62411	Advanced Diploma of Engineering Technology - Air-conditioning and Refrigeration
6	UEE62511	Advanced Diploma of Air-conditioning and Refrigeration Engineering
6	UEE63011	Advanced Diploma of Electrical Systems Engineering

Mapping of Qualifications

Table 2 Mapping of UEE11 Training Package Version 1 Qualifications to UEE07 Version 4 Qualifications

AQF Code	Certificate I Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
UEE10111	Certificate I in ElectroComms Skills	UEE10110	Certificate I in ElectroComms S

AQF Code	Certificate II Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
UEE20111	Certificate II in Split Air-conditioning and Heat Pump Systems	UEE20110	Certificate II in Split Air-conditioning and Heat Pumps Systems
Removed	Removed	UEE20207	Certificate II in Business Equipment Servicing
UEE20411	Certificate II in Winding and Assembly	UEE20407	Certificate II in Winding and Assembly
UEE20511	Certificate II in Computer Assembly and Repair	UEE20510	Certificate II in Computer Assembly and Repair
Removed	Removed	UEE20607	Certificate II in Custom Electronics and Setup
UEE20711	Certificate II in Data and Voice Communications	UEE20707	Certificate II in Data and Voice Communications
UEE20811	Certificate II in Electrical Wholesaling	UEE20810	Certificate II in Electrical Wholesaling
UEE20911	Certificate II in Electronic Assembly	UEE20907	Certificate II in Electronic Assembly
UEE21011	Certificate II in Fire Alarms Servicing	UEE21007	Certificate II in Fire Alarms Servicing
Removed	Removed	UEE21107	Certificate II in Gaming Machine Servicing
UEE21211	Certificate II in Antennae Equipment	UEE21207	Certificate II in Antennae Equipment
UEE21311	Certificate II in Remote Area Essential Service	UEE21310	Certificate II in Remote Area Essential Service
UEE21411	Certificate II in Remote Area Power Supply Maintenance	UEE21407	Certificate II in Remote Area Power Supply Maintenance

AQF Code	Certificate II Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
Removed	Removed	UEE21510	Certificate II in Renewable Energy
UEE21611	Certificate II in Security Assembly and Setup	UEE21610	Certificate II in Security Assembly and Setup
UEE21711	Certificate II in Technical Support	UEE21710	Certificate II in Technical Support
UEE21911	Certificate II in Electronics	UEE21910	Certificate II in Electronics
UEE22011	Certificate II in Electrotechnology (Career Start)	UEE22010	Certificate II in Electrotechnology (Career Start)
UEE22111	Certificate II in Sustainable Energy (Career Start)	UEE22107	Certificate II in Sustainable Energy (Career Start)

AQF Code	Certificate III Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
UEE30111	Certificate III in Business Equipment	UEE30107	Certificate III in Business Equipment
UEE30211	Certificate III in Computer Systems Equipment	UEE30210	Certificate III in Computer Systems Equipment
UEE30311	Certificate III in Custom Electronics Installations	UEE30310	Certificate III in Custom Electronics Installations
UEE30411	Certificate III in Data and Voice Communications	UEE30407	Certificate III in Data and Voice Communications
UEE30611	Certificate III in Electrical Machine Repair	UEE30607	Certificate III in Electrical Machine Repair
UEE30711	Certificate III in Switchgear and Control Gear	UEE30707	Certificate III in Switchgear and Control Gear
UEE30811	Certificate III in Electrotechnology Electrician	UEE30807	Certificate III in Electrotechnology Electrician
UEE30911	Certificate III in Electronics and Communications	UEE30910	Certificate III in Electronics and Communications
UEE31011	Certificate III in Fire Protection Control	UEE31007	Certificate III in Fire Protection Control
UEE31111	Certificate III in Gaming Electronics	UEE31107	Certificate III in Gaming Electronics

AQF Code	Certificate III Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
UEE31211	Certificate III in Instrumentation and Control	UEE31210	Certificate III in Instrumentation
UEE31411	Certificate III in Security Equipment	UEE31410	Certificate III in Security Equipm
UEE31511	Certificate III in Rail – Communications and Networks	UEE31507	Certificate III in Rail – Commun Networks
Removed	Removed	UEE31710	Certificate III in Hazardous areas Electrician
Removed	Removed	UEE31810	Certificate III in Hazardous areas Instrumentation
Removed	Removed	UEE31910	Certificate III in Explosion-protect equipment overhaul
UEE32011	Certificate III in Renewable Energy - ELV	UEE32010	Certificate III in Renewable Ener
UEE32111	Certificate III in Appliance Service	UEE32110	Certificate III in Appliance Servi
UEE32211	Certificate III in Air-conditioning and Refrigeration	UEE32210	Certificate III in Air-conditioning Refrigeration
UEE33011	Certificate III in Electrical Fitting	New Qual	New Qualification

AQF Code	Certificate IV Qualifications (UEE11 –V1)	AQF Code	Training Package (UEE07 – V4)
UEE40111	Certificate IV in Computer Systems	UEE40110	Certificate IV in Computer Syste
UEE40211	Certificate IV in Electrical – Data and Voice Communications	UEE40210	Certificate IV in Electrical – Data Communications
UEE40311	Certificate IV in Electrical Installation Inspection and Audits	UEE40310	Certificate IV in Electrical Install Inspection and Audits
UEE40411	Certificate IV in Electrical – Instrumentation	UEE40410	Certificate IV in Electrical – Inst
UEE40511	Certificate IV in Electrical – Air-conditioning Split Systems	UEE40510	Certificate IV in Electrical – Air- Systems
UEE40611	Certificate IV in Electrotechnology – Systems	UEE40610	Certificate IV in Electrotechnolo

AQF Code	Certificate IV Qualifications (UEE11 –V1)	AQF Code	Training Package (UEE07 – V4)
	Electrician		Electrician
UEE40711	Certificate IV in Electronics and Communications	UEE40710	Certificate IV in Electronics and Communications
UEE40811	Certificate IV in Electrical – Fire Protection Control Systems	UEE40810	Certificate IV in Electrical – Fire Control Systems
UEE40911	Certificate IV in Industrial Electronics and Control	UEE40910	Certificate IV in Industrial Electronics and Control
UEE41011	Certificate IV in Energy Management and Control	UEE41010	Certificate IV in Energy Management and Control
UEE41111	Certificate IV in Electrical – Lift Systems	UEE41110	Certificate IV in Electrical – Lift Systems
UEE41211	Certificate IV in Electrical – Rail Signalling	UEE41210	Certificate IV in Electrical – Rail Signalling
UEE41511	Certificate IV in Video and Audio Systems	UEE41510	Certificate IV in Video and Audio Systems
UEE41611	Certificate IV in Renewable Energy	UEE41610	Certificate IV in Renewable Energy
UEE41711	Certificate IV in Rail – Communications and Network Systems	UEE41710	Certificate IV in Rail – Communications and Network Systems
UEE41911	Certificate IV in Electrical – Renewable Energy	UEE41910	Certificate IV in Electrical – Renewable Energy
UEE42011	Certificate IV in Electrical – Photovoltaic Systems	UEE42010	Certificate IV in Electrical – Photovoltaic Systems
UEE42111	Certificate IV in Electrotechnology – Electrical Contracting	UEE42110	Certificate IV in Electrotechnology – Electrical Contracting
UEE42211	Certificate IV in Instrumentation and Control	UEE42210	Certificate IV in Instrumentation and Control
Removed	Removed	UEE42410	Certificate IV in Hazardous areas – Electrical control
UEE42611	Certificate IV in Hazardous areas – Electrical	UEE42610	Certificate IV in Hazardous areas – Electrical
UEE42711	Certificate IV in Air-conditioning and Refrigeration Servicing	UEE42710	Certificate IV in Air-conditioning and Refrigeration Servicing
UEE42811	Certificate IV in Air-conditioning Systems Energy Management and Control	UEE42810	Certificate IV in Air-conditioning Systems Energy Management and Control

AQF Code	Certificate IV Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
UEE42911	Certificate IV in Refrigeration and Air-conditioning Systems	UEE42910	Certificate IV in Refrigeration and Air-conditioning Systems
UEE43011	Certificate IV in Electrical Equipment and Systems	New Qual	New Qualification
UEE43111	Certificate IV in Energy Efficiency and Assessment	New Qual	New Qualification
UEE43211	Certificate IV in Industrial Automation and Control	New Qual	New Qualification

AQF Code	Diploma Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
UEE50111	Diploma of Computer Systems Engineering	UEE50110	Diploma of Computer Systems Engineering
UEE50211	Diploma of Electrical and Instrumentation	UEE50210	Diploma of Electrical and Instrumentation
UEE50311	Diploma of Electrical and Refrigeration and Air-conditioning	UEE50310	Diploma of Electrical and Refrigeration and Air-conditioning
UEE50411	Diploma of Electrical Engineering	UEE50410	Diploma of Electrical Engineering
UEE50511	Diploma of Electronics and Communications Engineering	UEE50510	Diploma of Electronics and Communications Engineering
UEE50711	Diploma of Renewable Energy Engineering	UEE50710	Diploma of Renewable Energy Engineering
UEE50811	Diploma of Research and Development	UEE50810	Diploma of Research and Development
UEE50911	Diploma of Industrial Electronics and Control Engineering	UEE50910	Diploma of Industrial Electronics and Control Engineering
UEE51011	Diploma of Instrumentation and Control Engineering	UEE51010	Diploma of Instrumentation and Control Engineering
UEE51111	Diploma of Engineering Technology - Refrigeration and Air-conditioning	UEE51110	Diploma of Engineering Technology - Refrigeration and Air-conditioning
UEE51211	Diploma of Air-conditioning and Refrigeration Engineering	UEE51210	Diploma of Air-conditioning and Refrigeration Engineering

AQF Code	Diploma Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
UEE53011	Diploma of Electrical Systems Engineering	New Qual	New Qualification

AQF Code	Advanced Diploma Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
UEE60211	Advanced Diploma of Electronics and Communications Engineering	UEE60210	Advanced Diploma of Electronic Communications Engineering
UEE60411	Advanced Diploma of Computer Systems Engineering	UEE60410	Advanced Diploma of Computer Engineering
UEE60611	Advanced Diploma of Industrial Electronics and Control Engineering	UEE60610	Advanced Diploma of Industrial and Control Engineering
UEE60911	Advanced Diploma of Renewable Energy Engineering	UEE60910	Advanced Diploma of Renewable Energy Engineering
UEE61111	Advanced Diploma of Automated Systems Maintenance Engineering	UEE61110	Advanced Diploma of Automated Systems Maintenance Engineering
UEE61211	Advanced Diploma of Engineering Explosion protection	UEE61210	Advanced Diploma of Engineering Explosion protection
Removed	Removed	UEE61410	Advanced Diploma of Engineering Explosion protection - Industrial
UEE61511	Advanced Diploma of Instrumentation and Control Engineering	UEE61510	Advanced Diploma of Instrumentation and Control Engineering
UEE61711	Advanced Diploma of Engineering Technology - Electronic	UEE61710	Advanced Diploma of Engineering Technology - Electronic
UEE61811	Advanced Diploma of Engineering Technology - Computer Systems	UEE61810	Advanced Diploma of Engineering Technology - Computer Systems
UEE62011	Advanced Diploma of Engineering Technology - Renewable Energy	UEE62010	Advanced Diploma of Engineering Technology - Renewable Energy
UEE62111	Advanced Diploma of Engineering Technology – Electrical	UEE62110	Advanced Diploma of Engineering Technology – Electrical
UEE62211	Advanced Diploma of Electrical – Engineering	UEE62210	Advanced Diploma of Electrical Engineering

AQF Code	Advanced Diploma Qualifications (UEE11 – V1)	AQF Code	Training Package (UEE07 – V4)
UEE62311	Advanced Diploma of Electrical Engineering – Coal Mining	UEE62310	Advanced Diploma of Electrical – Coal Mining
UEE62411	Advanced Diploma of Engineering Technology – Air-conditioning and Refrigeration	UEE62410	Advanced Diploma of Engineering Technology – Air-conditioning and Refrigeration
UEE62511	Advanced Diploma of Air-conditioning and Refrigeration Engineering	UEE62510	Advanced Diploma of Air-conditioning and Refrigeration Engineering
UEE63011	Advanced Diploma of Electrical Systems Engineering	New Qual	New Qualification

Table 3 Mapping of UEE07 Training Package Version 4 Qualifications to UEE07 Version 3.1 Qualifications

AQF Code	Certificate II Qualifications (UEE07 – V4)	Training Package (UEE07 – V3.1)
UEE20111	Certificate II in Split Air-conditioning and Heat Pumps Systems	Certificate II in Air-conditioning Split S
	Removed	Certificate II in Appliance Servicing – R

AQF Code	Certificate III Qualifications (UEE07 – V4)	Training Package (UEE07 – V3.1)
UEE32111	Certificate III in Appliance Service	Certificate III in Appliance Servicing
UEE32211	Certificate III in Air-conditioning and Refrigeration	Certificate III in Refrigeration and Air-c

AQF Code	Certificate IV Qualifications (UEE07 –V4)	Training Package (UEE07 – V3.1)
UEE42711	Certificate IV in Air-conditioning and Refrigeration Servicing	Certificate IV in Refrigeration and Air-c Servicing
UEE42811	Certificate IV in Air-conditioning Systems Energy Management and Control	Certificate IV in Air-conditioning Energy Control

AQF Code	Certificate IV Qualifications (UEE07 –V4)	Training Package (UEE07 – V3.1)
UEE42911	Certificate IV in Refrigeration and Air-conditioning Systems	Certificate IV in Air-conditioning and Refrigeration Systems

AQF Code	Diploma Qualifications (UEE07 – V4)	Training Package (UEE07 – V3.1)
UEE51111	Diploma of Engineering Technology – Refrigeration and Air-conditioning	New Qualification
UEE51211	Diploma of Air-conditioning and Refrigeration Engineering	Diploma of Refrigeration and Air-conditioning Engineering

AQF Code	Advanced Diploma Qualifications (UEE07 – V4)	Training Package (UEE07 – V3.1)
UEE62211	Advanced Diploma of Electrical - Engineering	Advanced Diploma of Electrical Engineering
UEE62311	Advanced Diploma of Electrical Engineering – Coal Mining	New Qualification
UEE62411	Advanced Diploma of Engineering Technology – Air-conditioning and Refrigeration	Advanced Diploma of Engineering Technology – Refrigeration and Air-conditioning
UEE62511	Advanced Diploma of Air-conditioning and Refrigeration Engineering	Advanced Diploma of Refrigeration and Air-conditioning Engineering

Table 4 Mapping of UEE07 Training Package Version 3.1 Qualifications to UEE07 Version 3.0 Qualifications

Detailed below is a summary qualifications mapping of the Version 3.1 Electrotechnology Training Package (UEE07) to the version 3.0 Electrotechnology Training Package (UEE07). This table maps only the Qualifications which have changed between these versions.

AQF Code	Certificate I Qualifications (UEE07 – V3.1)	Training Package (UEE07 – V3.0)
UEE10110	Certificate I in ElectroComms Skills	UEE10110 Certificate I in ElectroComms Skills

AQF Code	Certificate II Qualifications (UEE07 – V3.1)	Training Package (UEE07 – V3.0)
UEE20510	Certificate II in Computer Assembly and Repair	UEE20507 Certificate II in Computer Assembly and Repair
UEE21310	Certificate II in Remote Area Essential Service	UEE21310 Certificate II in Remote Area Essential Service
UEE21610	Certificate II in Security Assembly and Setup	UEE21610 Certificate II in Security Assembly and Setup
UEE21710	Certificate II in Technical Support	UEE21710 Certificate II in Technical Support
UEE21910	Certificate II in Electronics	UEE21907 Certificate II in Electronics
UEE22010	Certificate II in Electrotechnology (Career Start)	UEE22010 Certificate II in Electrotechnology (Career Start)

AQF Code	Certificate III Qualifications (UEE07 – V3.1)	Training Package (UEE07 – V3.0)
UEE30210	Certificate III in Computer Systems Equipment	UEE30207 Certificate III in Computer Systems Equipment
UEE30310	Certificate III in Custom Electronics Installations	UEE30310 Certificate III in Custom Electronics Installations
UEE30910	Certificate III in Electronics and Communications	UEE30910 Certificate III in Electronics and Communications

AQF Code	Certificate IV Qualifications (UEE07 – V3.1)	Training Package (UEE07 – V3.0)
UEE40110	Certificate IV in Computer Systems	UEE40110 Certificate IV in Computer Systems
UEE40710	Certificate IV in Electronics and Communications	UEE40710 Certificate IV in Electronics and Communications
UEE41510	Certificate IV in Video and Audio Systems	UEE41507 Certificate IV in Video and Audio Systems
UEE41610	Certificate IV in Renewable Energy	UEE41610 Certificate IV in Renewable Energy

AQF Code	Diploma Qualifications (UEE07 – V3.1)	Training Package (UEE07 – V3.0)
UEE50110	Diploma of Computer Systems Engineering	UEE50110 Diploma of Computer Systems Engineering

AQF Code	Diploma Qualifications (UEE07 – V3.1)	Training Package (UEE07 – V3.0)
UEE50510	Diploma of Electronics and Communications Engineering	UEE50510 Diploma of Electronics and Communications Engineering

AQF Code	Advanced Diploma Qualifications (UEE07 – V3.1)	Training Package (UEE07 – V3.0)
UEE60210	Advanced Diploma of Electronics and Communications Engineering	UEE60210 Advanced Diploma of Electronics and Communications Engineering
UEE60410	Advanced Diploma of Computer Systems Engineering	UEE60407 Advanced Diploma of Computer Systems Engineering
UEE62010	Advanced Diploma of Engineering Technology - Renewable Energy	UEE61007 Advanced Diploma of Renewable Energy Technology
UEE62110	Advanced Diploma of Engineering Technology - Electrical	UEE61307 Advanced Diploma of Electrical Engineering Technology

Table 5 Mapping of UEE07 Training Package Version 3 Qualifications to UEE07 Version 2 Qualifications

Detailed below is a summary qualifications mapping of the Version 3 Electrotechnology Training Package (UEE07) to the version 2 Electrotechnology Training Package (UEE07). This table maps only the Qualifications which have changed between these versions.

AQF Code	Certificate I Qualifications (UEE07 – V3)	Training Package (UEE07 – V2)
UEE10110	Certificate I in ElectroComms Skills	UEE10107 Certificate I in ElectroComms Skills

AQF Code	Certificate II Qualifications (UEE07 – V3)	Training Package (UEE07 – V2)
UEE20810	Certificate II in Electrical Wholesaling	New Qualification
UEE21310	Certificate II in Remote Area Essential Service	UEE21307 Certificate II in Remote Area Essential Service
UEE21510	Certificate II in Renewable Energy	UEE21507 Certificate II in Renewable Energy
UEE21610	Certificate II in Security Assembly and Setup	UEE21607 Certificate II in Security Assembly and Setup

AQF Code	Certificate II Qualifications (UEE07 – V3)	Training Package (UEE07 – V2)
		Setup
UEE21810	Certificate II in Appliance Servicing – Refrigerants	UEE21807 Certificate II in Appliance Servicing – Refrigerants
UEE22010	Certificate II in Electrotechnology (Career Start)	UEE22007 Certificate II in Electrotechnology (Career Start)

AQF Code	Certificate III Qualifications (UEE07 – V3)	Training Package (UEE07 – V2)
UEE30310	Certificate III in Custom Electronics Installations	UEE30307 Certificate III in Custom Electronics Installations
UEE30510	Certificate III in Appliance Servicing	UEE30507 Certificate III in Appliance Servicing
UEE30910	Certificate III in Electronics and Communications	UEE30907 Certificate III in Electronics and Communications
UEE31210	Certificate III in Instrumentation and Control	UEE31207 Certificate III in Instrumentation and Control
UEE31410	Certificate III in Security Equipment	UEE31407 Certificate III in Security Equipment
UEE31710	Certificate III in Hazardous areas – Electrician	UEE31707 Certificate III in Hazardous areas – Electrician
UEE31810	Certificate III in Hazardous areas – Instrumentation	UEE31807 Certificate III in Hazardous areas – Instrumentation
UEE31910	Certificate III in Explosion-protected equipment overhaul	UEE31907 Certificate III in Explosion-protected equipment overhaul
UEE32010	Certificate III in Renewable Energy - ELV	UEE32007 Certificate III in Renewable Energy - ELV

AQF Code	Certificate IV Qualifications (UEE07 – V3)	Training Package (UEE07 – V2)
UEE40110	Certificate IV in Computer Systems	UEE40107 Certificate IV in Computer Systems
UEE40210	Certificate IV in Electrical – Data and Voice Communications	UEE40207 Certificate IV in Electrical – Data and Voice Communications
UEE40310	Certificate IV in Electrical Installation Inspection and	UEE40307 Certificate IV in Electrical Installation Inspection and

AQF Code	Certificate IV Qualifications (UEE07 –V3)	Training Package (UEE07 – V2)
	Audits	Inspection and Audits
UEE40410	Certificate IV in Electrical – Instrumentation	UEE40407 Certificate IV in Electrical Instrumentation
UEE40510	Certificate IV in Electrical – Air-conditioning Systems	UEE40507 Certificate IV in Electrical conditioning Systems
UEE40610	Certificate IV in Electrotechnology – Systems Electrician	UEE40607 Certificate IV in Electrotechnology Systems Electrician
UEE40710	Certificate IV in Electronics and Communications	UEE40707 Certificate IV in Electronics and Communications
UEE40810	Certificate IV in Electrical – Fire Protection Control Systems	UEE40807 Certificate IV in Electrical Control Systems
UEE40910	Certificate IV in Industrial Electronics and Control	UEE40907 Certificate IV in Industrial Electronics and Control – Option 1 only
UEE41010	Certificate IV in Energy Management and Control	UEE41007 Certificate IV in Energy Management and Control – Option 2 only
UEE41110	Certificate IV in Electrical – Lift Systems	UEE41107 Certificate IV in Electrical – Lift Systems
UEE41210	Certificate IV in Electrical – Rail Signalling	UEE41207 Certificate IV in Electrical – Rail Signalling
UEE41310	Certificate IV in Refrigeration and Air-conditioning Servicing	UEE41307 Certificate IV in Refrigeration and Air-conditioning Servicing
UEE41510	Certificate IV in Video and Audio Systems	UEE41507 Certificate IV in Video and Audio Systems
UEE41610	Certificate IV in Renewable Energy	UEE41607 Certificate IV in Renewable Energy
UEE41710	Certificate IV in Rail – Communications and Network Systems	UEE41707 Certificate IV in Rail – Communications and Network Systems
UEE41910	Certificate IV in Electrical – Renewable Energy	UEE41907 Certificate IV in Electrical – Renewable Energy
UEE42010	Certificate IV in Electrical – Photovoltaic Systems	UEE42009 Certificate IV in Electrical – Photovoltaic Systems
UEE42110	Certificate IV in Electrotechnology – Electrical Contracting	New Qualification

AQF Code	Certificate IV Qualifications (UEE07 –V3)	Training Package (UEE07 – V2)
UEE42210	Certificate IV in Instrumentation and Control	UEE40907 Certificate IV in Industrial Control – Option 2 only
UEE42310	Certificate IV in Air-conditioning Energy Management and Control	UEE41007 Certificate IV in Energy Control – Option 1 only
UEE42410	Certificate IV in Hazardous areas – Industrial control	UEE41807 Certificate IV in Hazardous areas – Option 2 only
UEE42510	Certificate IV in Air-conditioning and Refrigeration Systems	UEE41407 Certificate IV in Refrigeration and Air-conditioning Systems
UEE42610	Certificate IV in Hazardous areas - Electrical	UEE41807 Certificate IV in Hazardous areas – Option 1 only

AQF Code	Diploma Qualifications (UEE07 – V3)	Training Package (UEE07 – V2)
UEE50110	Diploma of Computer Systems Engineering	UEE50107 Diploma of Computer Systems Engineering
UEE50210	Diploma of Electrical and Instrumentation	UEE50207 Diploma of Electrical and Instrumentation
UEE50310	Diploma of Electrical and Refrigeration and Air-conditioning	UEE50307 Diploma of Electrical and Refrigeration and Air-conditioning
UEE50410	Diploma of Electrical Engineering	UEE50407 Diploma in Electrical Engineering
UEE50510	Diploma of Electronics and Communications Engineering	UEE50507 Diploma of Electronics and Communications Engineering
UEE50610	Diploma of Refrigeration and Air-conditioning Engineering	UEE50607 Diploma of Refrigeration and Air-conditioning Engineering
UEE50710	Diploma of Renewable Energy Engineering	UEE50707 Diploma of Renewable Energy Engineering
UEE50810	Diploma of Research and Development	UEE50807 Diploma of Research and Development
UEE50910	Diploma of Industrial Electronics and Control Engineering	UEE50907 Diploma of Industrial Electronics and Control Engineering – Option 1 only
UEE51010	Diploma in Instrumentation and Control Engineering	UEE50907 Diploma of Industrial Electronics and Control Engineering – Option 2 only

AQF Code	Advanced Diploma Qualifications (UEE07 – V3)	Training Package (UEE07 – V2)
UEE60110	Advanced Diploma of Electrical Engineering	UEE60107 Advanced Diploma in Ele
UEE60210	Advanced Diploma of Electronics and Communications Engineering	UEE60207 Advanced Diploma of Ele Communications Engineering
UEE60410	Advanced Diploma of Computer Systems Engineering	UEE60407 Advanced Diploma of Co Engineering
UEE60610	Advanced Diploma of Industrial Electronics and Control Engineering	UEE60607 Advanced Diploma of Ind and Control Engineering – Option 1 only
UEE60710	Advanced Diploma of Refrigeration and Air-conditioning Engineering	UEE60707 Advanced Diploma of Re conditioning Engineering
UEE60910	Advanced Diploma of Renewable Energy Engineering	UEE60907 Advanced Diploma of Re Engineering
UEE61110	Advanced Diploma of Automated Systems Maintenance Engineering	UEE61107 Advanced Diploma of Au Maintenance Engineering
UEE61210	Advanced Diploma of Engineering – Explosion protection	UEE61207 Advanced Diploma of En Explosion protection
UEE61410	Advanced Diploma of Engineering Explosion protection – Industrial control	UEE61207 Advanced Diploma of E Explosion protection – Option 2 only
UEE61510	Advanced Diploma of Instrumentation and Control Engineering	UEE60607 Advanced Diploma of In Electronics and Control Engineering – Option 2 only
UEE61710	Advanced Diploma of Engineering Technology - Electronic	UEE60307 Advanced Diploma of EL Technology
UEE61810	Advanced Diploma of Engineering Technology - Computer Systems	UEE60507 Advanced Diploma of Co Technology
UEE61910	Advanced Diploma of Engineering Technology - Refrigeration and Air-conditioning	New Qualification
UEE62010	Advanced Diploma of Engineering Technology - Renewable Energy	UEE61007 Advanced Diploma of Re Technology
UEE62110	Advanced Diploma of Engineering Technology - Electrical	UEE61307 Advanced Diploma of EL Technology

Table 6 Mapping of UEE07 Training Package Version 2 Qualifications to UEE07 Version 1 Qualifications

AQF Code	Qualifications in UEE07 version 2	Nature of Relationship to Previous UEE07 Version 1 Training Package
	All Existing Qualifications in UEE07 Version 1	All existing qualifications in UEE07 version 1 remain unchanged
UEE42009	Certificate IV in Electrical - Photovoltaic Systems New Qualification	Qualification designed to meet industry, regulatory and Clean Energy Council accreditation requirements for the design and/or installation of grid connected solar systems on domestic and commercial premises.

Table 7 Mapping of UEE07 Training Package Version 1 Qualifications to UEE06 Qualifications

Detailed below is a summary qualifications mapping of the former Electrotechnology Training Package (UEE06) to the new Electrotechnology Training Package (UEE07).

AQF Code	Certificate I Qualifications (UEE07)	Former Training Package (UEE06)
UEE10107	Certificate I in ElectroComms Skills	UEE10106 Certificate I in ElectroComms Skills

AQF Code	Certificate II Qualifications (UEE07)	Former Training Package (UEE06)
UEE20107	Certificate II in Air-conditioning Split Systems	UEE20106 Certificate II in Air-conditioning Split Systems
UEE20207	Certificate II in Business Equipment Servicing	UEE20206 Certificate II in Business Equipment Servicing
Reserved	Certificate II in Electrotechnology Business Support	Certificate II in Electrotechnology Business Support UTE20199
UEE20407	Certificate II in Winding and Assembly	UEE20406 Certificate II in Winding and Assembly
UEE20507	Certificate II in Computer Assembly and	UEE20506 Certificate II in Computer Assembly

AQF Code	Certificate II Qualifications (UEE07)	Former Training Package (UEE06)
	Repair	Repair
UEE20607	Certificate II in Custom Electronics Assembly and Setup	UEE20606 Certificate II in Custom Electronics Assembly and Setup
UEE20707	Certificate II in Data and Voice Communications	UEE20706 Certificate II in Data and Voice Communications
Reserved	Certificate II in Electrical Wholesaling	
UEE20907	Certificate II in Electronic Assembly	UEE20906 Certificate II in Electronic Assembly
UEE21007	Certificate II in Fire Alarms Servicing	UEE21006 Certificate II in Fire Alarms Servicing
UEE21107	Certificate II in Gaming Machines Servicing	UEE21106 Certificate II in Gaming Machines Servicing
UEE21207	Certificate II in Antennae Equipment	UEE21206 Certificate II in Antennae Equipment
UEE21307	Certificate II in Remote Area Essential Service	UEE21306 Certificate II in Remote Area Essential Service
UEE21407	Certificate II in Remote Area Power Supply Maintenance	UEE21406 Certificate II in Remote Area Power Supply Maintenance
UEE21507	Certificate II in Renewable Energy	UEE21506 Certificate II in Renewable Energy
UEE21607	Certificate II in Security Assembly and Setup	UEE21606 Certificate II in Security Assembly and Setup
UEE21707	Certificate II in Technical Support	UEE21706 Certificate II in Technical Support
UEE21807	Certificate II in Appliance Servicing – Refrigerants	UEE21806 Certificate II in Appliance Servicing – Refrigerants
UEE21907	Certificate II in Electronics	UEE21906 Certificate II in Electronics
UEE22007	Certificate II in Electrotechnology (Career Start)	UEE22000 Certificate II in Electrotechnology (Career Start)
UEE22107	Certificate II in Sustainable Energy (Career Start)	UEE22106 Certificate II in Sustainable Energy (Career Start)

AQF Code	Certificate III Qualifications (UEE07)	Former Training Package (UEE06)
UEE30107	Certificate III in Business Equipment	UEE30106 Certificate III in Business Equipment
UEE30207	Certificate III in Computer Systems Equipment	UEE30206 Certificate III in Computer Systems Equipment
UEE30307	Certificate III in Custom Electronics Installations	UEE30306 Certificate III in Custom Electronics Installations
UEE30407	Certificate III in Data and Voice Communications	UEE30406 Certificate III in Data and Voice Communications
UEE30507	Certificate III in Appliance Servicing	UEE30506 Certificate III in Appliance Servicing
UEE30607	Certificate III in Electrical Machine Repair	UEE30606 Certificate III in Electrical Machine Repair
UEE30707	Certificate III in Switchgear and Control Gear	UEE30706 Certificate III in Switchgear and Control Gear
UEE30807	Certificate III in Electrotechnology Electrician	UEE30806 Certificate III in Electrotechnology Electrician

AQF Code	Certificate III Qualifications (UEE07)	Former Training Package (UEE06)
UEE30907	Certificate III in Electronics and Communications	UEE30906 Certificate III in Electronics and Communications
UEE31007	Certificate III in Fire Protection Control	UEE31006 Certificate III in Fire Protection Control
UEE31107	Certificate III in Gaming Electronics	UEE31106 Certificate III in Gaming Electronics
UEE31207	Certificate III in Instrumentation and Control	UEE31206 Certificate III in Instrumentation and Control
UEE31307	Certificate III in Refrigeration and Air-conditioning	UEE31306 Certificate III in Refrigeration and Air-conditioning
UEE31407	Certificate III in Security Equipment	UEE31406 Certificate III in Security Equipment
UEE31507	Certificate III in Rail – Communications and Networks	UEE31506 Certificate III in Rail – Communications and Networks

AQF Code	Certificate III Qualifications (UEE07)	Former Training Package (UEE06)
Reserved	Certificate III in Wireless Communications	Certificate III in Wireless Communications
UEE31707	Certificate III in Hazardous areas – Electrician	UEE31706 Certificate III in Hazardous areas – Electrician
UEE31807	Certificate III in Hazardous areas – Instrumentation	UEE31806 Certificate III in Hazardous areas – Instrumentation
UEE31907	Certificate III in Explosion-protected equipment overhaul	UEE31906 Certificate III in Explosion-protected equipment overhaul
UEE32007	Certificate III in Renewable Energy - ELV	New

AQF Code	Certificate IV Qualifications (UEE07)	Former Training Package (UEE06)
UEE40107	Certificate IV in Computer Systems	UEE40106 Certificate IV in Computer Systems
UEE40207	Certificate IV in Electrical – Data and Voice Communications	UEE40206 Certificate IV in Electrical – Data and Voice Communications
UEE40307	Certificate IV in Electrical Installation Inspection and Audits	UEE40306 Certificate IV in Electrical Installation Inspection and Audits
UEE40407	Certificate IV in Electrical – Instrumentation	UEE40406 Certificate IV in Electrical – Instrumentation

AQF Code	Certificate IV Qualifications (UEE07)	Former Training Package (UEE06)
UEE40507	Certificate IV in Electrical – Air-conditioning Systems	UEE40506 Certificate IV in Electrical – Air-conditioning Systems
UEE40607	Certificate IV in Electrotechnology – Systems Electrician	UEE40606 Certificate IV in Electrotechnology Systems Electrician
UEE40707	Certificate IV in Electronics and Communications	UEE40706 Certificate IV in Electronics and Communications
UEE40807	Certificate IV in Electrical – Fire Protection Control Systems	UEE40806 Certificate IV in Electrical – Fire Protection Control Systems
UEE40907	Certificate IV in Industrial Electronics and Control	UEE40906 Certificate IV in Industrial Electronics and Control
UEE41007	Certificate IV in Energy Management and Control	UEE41006 Certificate IV in Energy Management and Control
UEE41107	Certificate IV in Electrical – Lift Systems	UEE41106 Certificate IV in Electrical – Lift Systems
UEE41207	Certificate IV in Electrical – Rail Signalling	UEE41206 Certificate IV in Electrical – Rail Signalling
UEE41307	Certificate IV in Refrigeration and Air-conditioning Servicing	UEE41306 Certificate IV in Refrigeration and Air-conditioning Servicing
UEE41407	Certificate IV in Refrigeration and Air-conditioning Systems	UEE41406 Certificate IV in Refrigeration and Air-conditioning Systems
UEE41507	Certificate IV in Video and Audio Systems	UEE415076 Certificate IV in Video and Audio Systems

AQF Code	Certificate IV Qualifications (UEE07)	Former Training Package (UEE06)
UEE41607	Certificate IV in Renewable Energy	UEE41606 Certificate IV in Renewable Energy
UEE41707	Certificate IV in Rail – Communications and Network Systems	UEE41706 Certificate IV in Rail – Communications and Network Systems
UEE41807	Certificate IV in Hazardous areas	UEE41806 Certificate IV in Hazardous areas
UEE41907	Certificate IV in Electrical – Renewable Energy	New

AQF Code	Diploma Qualifications (UEE07)	Former Training Package (UEE06)
UEE50107	Diploma of Computer Systems Engineering	UEE50106 Diploma in Computer Systems Engineering
UEE50207	Diploma of Electrical and Instrumentation	UEE50206 Diploma of Electrical and Instrumentation
UEE50307	Diploma of Electrical and Refrigeration and Air-conditioning	UEE50306 Diploma of Electrical and Refrigeration and Air-conditioning
UEE50407	Diploma of Electrical Engineering	UEE50406 Diploma in Electrical Engineering
UEE50507	Diploma of Electronics and Communications Engineering	UEE50506 Diploma of Electronics and Communications Engineering
UEE50607	Diploma of Refrigeration and Air-conditioning Engineering	UEE50606 Diploma of Refrigeration and Air-conditioning Engineering
UEE50707	Diploma of Renewable Energy Engineering	UEE50706 Diploma of Renewable Energy Engineering

AQF Code	Diploma Qualifications (UEE07)	Former Training Package (UEE06)
UEE50807	Diploma of Research and Development	UEE50806 Diploma of Research and Development
UEE50907	Diploma of Industrial Electronics and Control Engineering	UEE50906 Diploma of Industrial Electronics and Control Engineering

AQF Code	Advanced Diploma Qualifications (UEE07)	Former Training Package (UEE06)
UEE60107	Advanced Diploma of Electrical Engineering	Advanced Diploma in Electrical Engineering
UEE60207	Advanced Diploma of Electronics and Communications Engineering	UEE60206 Advanced Diploma of Electronics and Communications Engineering
UEE60307	Advanced Diploma of Electronic – Technology	UEE60306 Advanced Diploma of Electronic – Technology
UEE60407	Advanced Diploma of Computer Systems Engineering	UEE60406 Advanced Diploma of Computer Systems Engineering
UEE60507	Advanced Diploma of Computer Systems – Technology	UEE60506 Advanced Diploma of Computer Systems – Technology
UEE60607	Advanced Diploma of Industrial Electronics and Control Engineering	UEE60606 Advanced Diploma of Industrial Electronics and Control Engineering
UEE60707	Advanced Diploma of Refrigeration and Air-conditioning Engineering	UEE60706 Advanced Diploma of Refrigeration and Air-conditioning Engineering
UEE60807	Advanced Diploma of Refrigeration and Air-conditioning – Technology	UEE60806 Advanced Diploma of Refrigeration and Air-conditioning – Technology
UEE60907	Advanced Diploma of Renewable Energy Engineering	UEE60906 Advanced Diploma of Renewable Energy Engineering
UEE61007	Advanced Diploma of Renewable Energy – Technology	UEE61006 Advanced Diploma of Renewable Energy – Technology

AQF Code	Advanced Diploma Qualifications (UEE07)	Former Training Package (UEE06)
UEE61107	Advanced Diploma of Automated Systems Maintenance Engineering	UEE61106 Advanced Diploma of Automated Systems Maintenance Engineering
UEE61207	Advanced Diploma of Engineering – Explosion protection	UEE61206 Advanced Diploma of Engineering Explosion protection
UEE61307	Advanced Diploma of Electrical – Technology	UEE61306 Advanced Diploma of Electrical – Technology

Summary of Units of Competency in this Training Package

Table 8 – UEE11 Electrotechnology Industry Training Package - Competency Standard Units

DISCIPLINE LETTER	UNIT DISCIPLINE	No. of CSUs
A	Assembly	10
B	Broadcast	1
C	Commercial	25
D	Computerised Systems	34
E	Cross-Discipline	67
F	Data and Voice	15
G	Electrical	74
H	Electronic	87
I	Instrument	56
J	Refrigeration and Air Conditioning	92
K	Renewable and Sustainable	48
M	Hazardous	61
N	Rail	19

P	Restricted	17
R	Research	6
	Total Competency Standard Units	612

Full details of the Competency Standards Units in this Training Package including: Unit Code, Title, Weighting Points, AQF Level, Pre-requisites and Qualification Mapping, are contained in the Index of Competency Standard Units, in Volume 1 Part 3 Competency Standards Index of this Training Package.

A mapping Competency Standard Units including the relationship between units which have been amended, added or Removed from versions of Generation Sector Training Package and equivalences is included in Volume 1 Part 3 Competency Standards Index of this Training Package.

Table 9 - Imported Units of Competency in the UEE11 Training Package Version 1

Training Package	Training Package Title	Version	No. of Units
BSB07	Business Services Training Package	5	13
CPC08	Construction, Plumbing and Services Training Package	6.1	3
HLT07	Health Training Package	4	2
ICT10	Integrated Telecommunications Training Package	1	9
MEM05	Metal and Engineering Training Package	5	12
MSA07	Manufacturing Training Package	6	6
NWP07	Water Training Package	2	20
PMA08	Chemical, Hydrocarbons And Oil Refining Training Package	2.1	1
PRM04	Asset Maintenance Training Package	3	1
RHI09	Resources and Infrastructure Industry Training Package	2	5
TLI10	Transport And Logistics Training Package	1.1	4
UEP06	Electricity Supply Industry - Generation Sector Training Package	1.1	3

UET11	Electricity Supply Industry - Transmission, Distribution and Rail Sector Training Package	1	12
Total Imported CSUs			91

Full details of the Imported Units in this Training Package are contained in the Index of Competency Standard Units in Volume 1 Part 3 Competency Standards Index of this Training Package.

Please consult the source Training Package for information, including equivalences, in relation to new and updated imported units included in this version of the Generation Sector Training Package.

List of Imported Units of Competency

Included in this Training Package is a list of units of competency imported from other endorsed training packages into the Electrotechnology Training Package. This advice is detailed in Volume 1 Part 2 – Competency Standards Units Index, Table 2 – section L.

Language, Literacy, Numeracy

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

Access, Equity and Cultural Diversity

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

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

Acknowledgments

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

- National Electrotechnology Sector Council of the EE-Oz Training Standards Board
- The National Electrotechnology Competency Advisory Council (NECAC)
- The National Electrotechnology Training Advisory Group (NETAG) members
- The Chairs of the discipline Training Advisory Committees (TACs) – electrical and data; refrigeration and air conditioning; instrumentation; industrial control and hazardous areas, renewable and sustainable energy and electronics and computer systems
- The Chairs, Executive Officers, and Members of the State and Territory Utilities and Electrotechnology Network ITABs and their various sub-committees
- The joint EE-Oz Training Standards/Standards Electrical Equipment in Hazardous Areas Competency Advisory Panel (P12) Australia
- The Electrical Regulatory Advisory Council (ERAC)
- ANZETA
- The Trans Tasman Electrotechnology Working Group
- Skills Australia
- The Electrical Occupations Interim advisory Committee
- The Australian Media and Communications Authority
- The State and Territory Training Authorities
- The State and Territory Regulatory Authorities
- Industry sector registered training organisations and practitioners
- Industry sector Peak Bodies, Enterprises and Individual practitioners

Outline of this Training Package

Outline of this Training Package

The endorsed components of the Training Package are contained in two volumes. Volume 1 covers the overall Package framework and completion requirements for qualifications, and Volume 2 the content details for respective parts and sub-sections of Volume 1. Both volumes form an integrated whole and are not to be used independently of each other.

Volume 1: Structure and Overview

Qualification Framework

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

Competency Standards

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

Part 3 – Assessment Guidelines

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

Volume 2: Competency Standard Units — Content and scope

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

Note: The two volumes form an integrated whole and must not be used independently of each other.

Electrotechnology Training Package Layout

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

The Training Package has been constructed as a two volume set. Volume 1 covers the overall package framework and completion requirements for qualifications. Volume 2 includes the content details of parts and sub-sections of Volume 1. The two volumes form an integrated whole and are not to be used independently of each other.

Volume 1

Preliminary Information

The Electrotechnology Industry

Overview of Training Packages

The Electrotechnology Industry Training Package

Part 1 Qualifications Framework

Part 2 Competency Standards Overview and Index

Part 3 Assessment Guidelines

Appendix A – Australian Apprenticeships

Appendix B – Sample Assessment Instruments

Enclosures

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

Volume 2

Preliminary Information

Part 1 Definitions/Glossary

Part 2 Competency Standards

2.1 Competency Standard Units

A – Assembly

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

2.2 Essential Knowledge and Associated Skills

Volume of: Knowledge and Associated Skills — Reference Codes and Reference Names

Table of Essential Knowledge and Skills to Unit Matrix

Part 3 Language, Literacy and Numeracy

Important Note to Users

Training Packages are not static documents; they are amended periodically to reflect the latest industry practices and are version controlled. It is essential that the latest version is always used.

Check the version number before commencing training or assessment

This Training Package is Version 1 – check whether this is the latest version by going to the Training.gov.au website (www.training.gov.au) and locating information about the Training Package. Alternatively, contact EE-Oz Training Standards, www.ee-oz.com.au to confirm the latest version number.

Explanation of version number conventions

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

Explanation of the review date

The review date (shown on the title page and in the footer of each page) indicates when the Training Package is expected to be reviewed in the light of changes such as changing technologies and circumstances. The review date is not an expiry date. Endorsed Training Packages and their components remain current until they are reviewed or replaced.

Layout of this Training Package

Layout of this Training Package

Volume 1

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The Electrotechnology Industry
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The Electrotechnology Industry Training Package

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Appendix B – Sample Assessment Instruments

Enclosures

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Part 1 Definitions/Glossary

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2.1 Competency Standard Units

A – Assembly
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2.2 Essential Knowledge and Associated Skills (EKAS)

2.2.1 Table 1 – Knowledge and Associated Skills Relationship

2.2.2 Appendix 2 – Essential Knowledge and Skills to Unit Matrix
Part 3 Literacy and Numeracy Skills

AQF qualifications in this Training Package

Summary of AQF Qualifications in this Training Package

Table 1 - AQF qualifications in the Electrotechnology Training Package

AQF	Code	Title
1	UEE10111	Certificate I in ElectroComms Skills
2	UEE20111	Certificate II in Split Air-conditioning and Heat Pumps Systems
2	UEE20411	Certificate II in Winding and Assembly
2	UEE20511	Certificate II in Computer Assembly and Repair
2	UEE20711	Certificate II in Data and Voice Communications
2	UEE20811	Certificate II in Electrical Wholesaling
2	UEE20911	Certificate II in Electronic Assembly
2	UEE21011	Certificate II in Fire Alarms Servicing
2	UEE21211	Certificate II in Antennae Equipment
2	UEE21311	Certificate II in Remote Area Essential Service
2	UEE21411	Certificate II in Remote Area Power Supply Maintenance
2	UEE21611	Certificate II in Security Assembly and Set-up
2	UEE21711	Certificate II in Technical Support
2	UEE21911	Certificate II in Electronics
2	UEE22011	Certificate II in Electrotechnology (Career Start)
2	UEE22111	Certificate II in Sustainable Energy (Career Start)
3	UEE30111	Certificate III in Business Equipment
3	UEE30211	Certificate III in Computer Systems Equipment

3	UEE30311	Certificate III in Custom Electronics Installations
3	UEE30411	Certificate III in Data and Voice Communications
3	UEE30611	Certificate III in Electrical Machine Repair
3	UEE30711	Certificate III in Switchgear and Controlgear
3	UEE30811	Certificate III in Electrotechnology Electrician
3	UEE30911	Certificate III in Electronics and Communications
3	UEE31011	Certificate III in Fire Protection Control
3	UEE31111	Certificate III in Gaming Electronics
3	UEE31211	Certificate III in Instrumentation and Control
3	UEE31411	Certificate III in Security Equipment
3	UEE31511	Certificate III in Rail – Communications and Networks
3	UEE32011	Certificate III in Renewable Energy - ELV
3	UEE32111	Certificate III in Appliance Service
3	UEE32211	Certificate III in Air-conditioning and Refrigeration
3	UEE33011	Certificate III in Electrical Fitting
4	UEE40111	Certificate IV in Computer Systems
4	UEE40211	Certificate IV in Electrical – Data and Voice Communications
4	UEE40311	Certificate IV in Installation Inspection and Audits
4	UEE40411	Certificate IV in Electrical – Instrumentation
4	UEE40511	Certificate IV in Electrical – Air-conditioning Split Systems
4	UEE40611	Certificate IV in Electrotechnology – Systems Electrician
4	UEE40711	Certificate IV in Electronics and Communications
4	UEE40811	Certificate IV in Electrical – Fire Protection Control Systems
4	UEE40911	Certificate IV in Industrial Electronics and Control
4	UEE41011	Certificate IV in Energy Management and Control

4	UEE41111	Certificate IV in Electrical – Lift Systems
4	UEE41211	Certificate IV in Electrical – Rail Signalling
4	UEE41511	Certificate IV in Video and Audio Systems
4	UEE41611	Certificate IV in Renewable Energy
4	UEE41711	Certificate IV in Rail – Communications and Network Systems
4	UEE41911	Certificate IV in Electrical – Renewable Energy
4	UEE42011	Certificate IV in Electrical – Photovoltaic systems
4	UEE42111	Certificate IV in Electrotechnology – Electrical Contracting
4	UEE42211	Certificate IV in Instrumentation and Control
4	UEE42611	Certificate IV in Hazardous areas - Electrical
4	UEE42711	Certificate IV in Air-conditioning and Refrigeration Servicing
4	UEE42811	Certificate IV in Air-conditioning Systems Energy Management and Control
4	UEE42911	Certificate IV in Refrigeration and Air-conditioning Systems
4	UEE43011	Certificate IV in Electrical Equipment and Systems
4	UEE43111	Certificate IV in Energy Efficiency and Assessment
4	UEE43211	Certificate IV in Industrial Automation and Control
5	UEE50111	Diploma of Computer Systems Engineering
5	UEE50211	Diploma of Electrical and Instrumentation
5	UEE50311	Diploma of Electrical and Refrigeration and Air-conditioning
5	UEE50411	Diploma of Electrical Engineering
5	UEE50511	Diploma of Electronics and Communications Engineering
5	UEE50711	Diploma of Renewable Energy Engineering
5	UEE50811	Diploma of Research and Development
5	UEE50911	Diploma of Industrial Electronics and Control Engineering

5	UEE51011	Diploma of Instrumentation and Control Engineering
5	UEE51111	Diploma of Engineering Technology - Refrigeration and Air-conditioning
5	UEE51211	Diploma of Air-conditioning and Refrigeration Engineering
5	UEE53011	Diploma of Electrical Systems Engineering
6	UEE60211	Advanced Diploma of Electronics and Communications Engineering
6	UEE60411	Advanced Diploma of Computer Systems Engineering
6	UEE60611	Advanced Diploma of Industrial Electronics and Control Engineering
6	UEE60911	Advanced Diploma of Renewable Energy Engineering
6	UEE61111	Advanced Diploma of Automated Systems Maintenance Engineering
6	UEE61211	Advanced Diploma of Engineering – Explosion protection
6	UEE61511	Advanced Diploma of Instrumentation and Control Engineering
6	UEE61711	Advanced Diploma of Engineering Technology - Electronics
6	UEE61811	Advanced Diploma of Engineering Technology - Computer Systems
6	UEE62011	Advanced Diploma of Engineering Technology - Renewable Energy
6	UEE62111	Advanced Diploma of Engineering Technology - Electrical
6	UEE62211	Advanced Diploma of Electrical - Engineering
6	UEE62311	Advanced Diploma of Electrical Engineering – Coal Mining
6	UEE62411	Advanced Diploma of Engineering Technology - Air-conditioning and Refrigeration
6	UEE62511	Advanced Diploma of Air-conditioning and Refrigeration Engineering
6	UEE63011	Advanced Diploma of Electrical Systems Engineering

2. Skill Sets

Identified Skill Sets which meet regulatory or specialist requirements recognised by Statements of Attainment have been included to support required industry outcomes. These outcomes generally support requirements associated with regulatory, safety or specialised/hazardous functions of work.

Mapping Qualifications in this Training Package to the former

Mapping tables in this Training Package provide mapping of current units to previous versions of this Training Package and the former Electrotechnology Training Package (UEE06). These have been included to assist in linking previous units to new units and to assist in minimising any translation issues that may arise.

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

Relationship of Units of Competency to former Training Package and prerequisites

Included in this Training Package is a summary of:

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

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

List of Imported Units of Competency

Included in this Training Package is a list of units of competency imported from other endorsed training packages into the Electrotechnology Training Package. This advice is detailed in Volume 1 Part 2 – Competency Standards Units Index, Table 2 – section L.

Language, Literacy, Numeracy

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Access, Equity and Cultural Diversity

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

Responsibility for Training Package Maintenance

Responsibility for Training Package Maintenance

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

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

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

- *Maintenance of Competency Standards* – to initiate and respond to the need to review, vary, delete and add to the Electrotechnology competency standard units, as part of the sector's standards inventory
- *Maintenance of Competency Delivery Processes* – to monitor the effectiveness of the delivery of competency and so initiate and respond to issues which may impact on those processes
- *Maintenance of Assessment Guidelines* – to monitor the effectiveness of the Assessment Guidelines and supporting systems; to initiate and respond to issues which impact, or are likely to impact, on the quality of the assessment systems and to promote quality improvement throughout the system
- *Maintenance of the Qualification and Recognition Systems* – to monitor the effectiveness of the application of the Qualification and Recognition Systems contained in the Training Package and to review/revise the system as required
- *Validation of Imported Competency Standard Units* – to monitor the effectiveness and value of imported units for the purpose of their inclusion in the Training Package qualifications framework.

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

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

Membership of the original National Steering Group

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

Bob Paton		Manufacturing, Engineering and Related Services Industry Training Advisory Board
Christina Zey		Lift Skills Australia
Norm Cahill		Electrotechnology Industry Training Advisory Board (Large State)
John Karsznia		Electrotechnology Industry Training Advisory Board (Small State)
Mike Frew		NSW Technical and Further Education
Warren Miller		Standards Australia
Wolfgang Marshall		Electrotechnology Industry Training Organisation (New Zealand)
Jackie Marks		State/Territories Training Authorities
P J Fleming		National Occupation Health and safety Commission (NOHSC)
Steve Griffiths		Small Business
Neville Palmer		Medium Business
Peter Smith		Large Business
Bob Taylor		Utilities and Light Manufacturing Industry Training Board (Consultant)
Darrel Hills		Technical Consultant
Ian Graham	Regulators Representative	Chair of ERAC
Tony Palladino	Chief Executive Officer	EE-Oz Training Standards
Industry Officers	Observers	DEST
Additional technical representatives were called upon as required		

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- The Chairs, Executive Officers, and Members of the State and Territory Utilities and Electrotechnology Network ITABs and their various sub-committees
- The joint EE-Oz Training Standards/Standards Electrical Equipment in Hazardous Areas Competency Advisory Panel (P12) Australia
- The Electrical Regulatory Advisory Council (ERAC)
- the Australian Communications Authority and the Australian Communications Industry Forum (ACIC)
- The State and Territory Training Authorities
- The State and Territory Regulatory Authorities
- OHS Skills Development and Practical Guidance Team of the National Occupational Health and Safety Commission
- Industry sector registered training organisations and practitioners for contributing to and being supportive of the project
- Industry sector practitioners for contributing to and being supportive of the project.

Transition to NQC Training Package packaging rules for Flexibility

Transition to NQC Training Package packaging rules for Flexibility

The following qualifications have been modified to meet the requirements of the National Quality Council's Training Package packaging rules for flexibility:

UEE10110 Certificate I in Electrotechnology

UEE20110 Certificate II in Split Air-conditioning and Heat Pumps Systems

UEE20510 Certificate II in Computer Assembly and Repair

UEE21310 Certificate II in Remote Area Essential Service

- UEE21610 Certificate II in Security Assembly and Setup
- UEE21710 Certificate II in Technical Support
- UEE21910 Certificate II in Electronics
- UEE22010 Certificate II in Electrotechnology (Career Start)
- UEE30210 Certificate III in Computer Systems Equipment
- UEE30310 Certificate III in Custom Electronics Installations
- UEE30910 Certificate III in Electronics and Communications
- UEE32110 Certificate III in Appliance Service
- UEE32210 Certificate II in Air-conditioning and Refrigeration
- UEE40110 Certificate IV in Computer Systems
- UEE40710 Certificate IV in Electronics and Communications
- UEE41510 Certificate IV in Video and Audio Systems
- UEE42710 Certificate IV in Air-conditioning and Refrigeration Servicing
- UEE42810 Certificate IV in Air-conditioning Systems Energy Management and Control
- UEE42910 Certificate IV in Refrigeration and Air-conditioning Systems
- UEE50110 Diploma of Computer Systems Engineering
- UEE50510 Diploma of Electronics and Communications Engineering
- UEE51110 Diploma of Engineering Technology – Refrigeration and Air-conditioning
- UEE51210 Diploma of Air-conditioning and Refrigeration Engineering
- UEE60210 Advanced Diploma of Electronics and Communications Engineering
- UEE60410 Advanced Diploma of Computer Systems Engineering
- UEE62210 Advanced Diploma of Electrical – Engineering
- UEE62310 Advanced Diploma of Electrical Engineering - Coal Mining
- UEE62410 Advanced Diploma of Engineering Technology – Air-conditioning and Refrigeration
- UEE62510 Advanced Diploma of Air-conditioning and Refrigeration Engineering

Customisation of these qualifications is permitted in order to meet learner's individual needs, their current, intended or future work context, and a variety of possible industry environments.

For this purpose the importation of units up to one sixth of the total points value required for completion of a qualification is permitted from either one or a combination of the following three sources:

- Elsewhere in this Training Package
- Other Training Packages
- Accredited Courses

Units selected for importation under these provisions shall be first packaged in the source Training Package or Accredited Course at the AQF level of the target qualification.

The importation of units from these sources shall be within the boundaries of the integrity of the intended qualification outcomes, the requirements of the Australian Qualifications Framework, the Australian Quality Training Framework and all regulatory requirements applicable to the imported unit and/or the target qualification.

A maximum of 10 weighting points shall be allocated to units imported from sources other than those managed by EE-Oz Training Standards. Higher valuation of units selected for importation from sources other than EE-Oz Training Packages shall be referred to EE-Oz Training Standards for consideration and validation by industry...

Advice should be sought from the relevant state/territory registration and accreditation body to determine if there is a requirement for an extension to a Registered Training Organisation's scope of registration in relation to the imported unit/s.

Advice should be sought from the registration and accreditation body regarding the requirement to record report the inclusion of units imported under these provisions for the purposes of awarding a qualification.

Where units have been imported under these provisions, this shall be reported to EE-Oz Training Standards so that industry is aware of such units and can consider the endorsement of these into the relevant qualification(s).

1.1.00 The Australian Qualification Framework

Volume 1 Part 1 – Qualifications Framework

1.0 The Electrotechnology Industry Qualifications Framework

1.0 The Australian Qualification Framework

What is the Australian Qualifications Framework?

A brief overview of the Australian Qualifications Framework (AQF) follows. For a full explanation of the AQF, see the AQF Implementation Handbook.

http://www.aqf.edu.au/Portals/0/Documents/Handbook/AQF_Handbook_07.pdf

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

Training Package qualifications in the VET sector must comply with the titles and guidelines of the AQF. Endorsed Training Packages provide a unique title for each AQF qualification which must always be reproduced accurately.

Qualifications

Training Packages can incorporate the following eight AQF qualifications:

- Certificate I in ...
- Certificate II in ...
- Certificate III in ...
- Certificate IV in ...
- Diploma of ...
- Advanced Diploma of ...
- Vocational Graduate Certificate of ...
- Vocational Graduate Diploma of ...

On completion of the requirements defined in the Training Package, a Registered Training Organisation (RTO) may issue a nationally recognised AQF qualification. Issuance of AQF qualifications must comply with the advice provided in the AQF Implementation Handbook and the AQTF 2011 Essential Standards for Initial and Continuing Registration.

Statement of Attainment

A Statement of Attainment is issued by a Registered Training Organisation when an individual has completed one or more units of competency from nationally recognised qualification(s)/courses(s). Issuance of Statements of Attainment must comply with the advice provided in the current AQF Implementation Handbook and the AQTF 2010 Essential Standards for Initial and Continuing Registration. Under the AQTF 2010, RTOs must recognise the achievement of competencies as recorded on a qualification or Statement of Attainment issued by other RTOs. Given this, recognised competencies can progressively build towards a full AQF qualification.

AQF Guidelines and Learning Outcomes

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

Certificate II

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and skills would prepare a person to perform in a range of varied activities or knowledge application 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 operations 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.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate basic operational knowledge in a moderate range of areas;
- apply a defined range of skills;
- apply known solutions to a limited range of predictable problems;
- perform a range of tasks where choice between a limited range of options is required;
- assess and record information from varied sources;

- take limited responsibility for own outputs in work and learning

Certificate III

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and competencies would cover selecting, adapting and transferring skills and knowledge to Australian environments and providing technical advice and some leadership in resolution of specified 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.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

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

Certificate IV

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.

Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop Australian criteria and procedures for performing current practices and provision of some leadership and guidance to others in the application and planning of the skills.

Applications involve responsibility for, and limited organisation of, others.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

- demonstrate understanding of a broad knowledge base incorporating some theoretical concepts
- apply solutions to a defined range of unpredictable problems
- identify and apply skill and knowledge areas to a wide variety of contexts, with depth in some areas
- identify, analyse and evaluate information from a variety of sources
- take responsibility for own outputs in relation to specified quality standards
- take limited responsibility for the quantity and quality of the output of others

Diploma

Characteristics of Learning Outcomes

Breadth, depth and complexity covering planning and initiation of alternative approaches to skills or knowledge applications across a broad range of technical and/or management requirements, evaluation and coordination.

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

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

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

Distinguishing Features of Learning Outcomes

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

- demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas
- analyse and plan approaches to technical problems or management requirements
- transfer and apply theoretical concepts and/or technical or creative skills to a range of situations
- evaluate information, using it to forecast for planning or research purposes
- take responsibility for own outputs in relation to broad quantity and quality parameters

- take some responsibility for the achievement of group outcomes

Advanced Diploma

Characteristics of Learning Outcomes

Breadth, depth and complexity involving analysis, design, planning, execution and evaluation across a range of technical and/or management functions including development of Australian criteria or applications or knowledge or procedures.

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

Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to products, services, operations or procedures.

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

Distinguishing Features of Learning Outcomes

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

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

Regulatory Arrangements

Competency Standard Units, Skill Sets and Qualifications in this Training Package have been developed in consultation with the relevant industry technical and business Regulators so that, where appropriate, these align to the requirements of legislation, regulations and mandated codes of practice.

Licensing and regulatory authorities will recognise a range of Qualifications, Units or Skill Sets contained within this Training Package for respective licensing, registration or accreditation purposes. In constructing these qualifications, EE-Oz Training Standards and respective Regulators have given consideration to the link between the issuance of the qualification and the respective regulatory requirements. It is expected that the assessment and preferred training regime which meets the competency outcomes of the qualification and assessment, will therefore meet the regulatory requirements.

In recognising this interrelationship, every effort has been made to ensure currency in regulatory requirements, thus RTOs must ensure they are observed. This includes utilising any recommended industry training program designed to meet the Competency Standard Units and/or Qualification outcomes related to licensing/registration applications.

As RTO's registered under the Australian Quality Training Framework (AQTF) requirements are given full responsibility for deeming a learner/apprentice competent for the respective Competency Standard Units making up a Training Package Qualification or Skill Set, the RTO shall also provide all the necessary documentation (including results preferably percentile based) as required by the regulatory authority to support an application of eligibility for a relevant license, registration or accreditation.

It should be noted that regulatory authorities have advised that the quality of Registered Training Organisations issuing a qualification for regulatory purposes will be monitored. Where deficiencies are identified, regulators may deem it necessary to introduce appropriate actions, including an additional 'external' assessment following the issuing of the qualification to satisfy eligibility requirements for issuing the licence.

Exporting Electrotechnology Industry CSUs from this Training Package

Competency Standard Units in this Training Package are interrelated and linked with the Definitions/Glossary and Essential Knowledge and Associated Skills sections of the Volume. This also includes information related to language, literacy and numeracy, access, equity, cultural diversity and any regulatory arrangements for which the Competency Standard Units may apply. No Competency Standard Unit can be used in isolation or exported without these interrelated components.

1.1.01 Electrotechnology Industry Qualifications Framework

1.1 Electrotechnology Industry Qualifications Framework

The qualifications listed in this Training Package adhere to the advice provided in the current version of AQF Implementation Handbook. See www.aqf.edu.au.

The qualifications have been designed to comply with the provisions of and comply with the National Quality Council's (NQC) requirements for Flexibility of Training Package Qualifications to include:

- One Third or more of total units required to gain a VET qualification will be electives.
- The choice of Elective units can be broadened, to allow one sixth of total units to be included from other qualifications in a Training Package, other Training Packages and accredited courses.
- All units as either core or electives.

See:

http://www.nqc.tvetaustralia.com.au/__data/assets/pdf_file/0006/52269/National_Quality_Council_communique.pdf

It should be noted that under these provisions Licensed and trade occupations are exempt from these measures.

Application of the NQC Flexibility Formula

Industry has obtained formal agreement to the continued use of its unit weighting system for valuing individual competency standards and the effort required to achieve a qualification under these provisions.

Thus, for the qualifications in this Training Package, the terms "total units" and "total units required to gain a qualification" and the fractions thereof referred to above are calculated using the weighting points assigned to respective Competency Standard Units (CSU) rather than by a count of individual units. The Qualification Completion Requirements table below summarises the relevant weighting points values to satisfy the packaging rules of each qualification in accordance with the NQC Policy.

To allow for the inclusion of units imported from other qualifications and other Training Packages and accredited courses under this weighting points system, industry also gained agreement to the following process for importing and valuing such imported units, as follows:

- Customisation of these qualifications is permitted in order to meet learner's individual needs, their current, intended or future work context, and a variety of possible industry environments.
- For this purpose the importation of units up to one sixth of the total points value required for completion of a qualification is permitted from either one or a combination of the following three sources:
 - Elsewhere in this Training Package
 - Other Training Packages
 - Accredited Courses
- Units selected for importation under these provisions shall be first packaged in the source Training Package or Accredited Course at the AQF level of the target qualification.
- The importation of units from these sources shall be within the boundaries of the integrity of the intended qualification outcomes, the requirements of the Australian Qualifications Framework, the Australian Quality Training Framework and all regulatory requirements applicable to the imported unit and/or the target qualification.
- Minimum points (10) will be allocated to units imported from sources other than those managed by EE-Oz Training Standards. Advice on the valuation of units selected for importation from sources other than EE-Oz Training Packages shall be sought from the relevant EE-Oz Technical Advisory Committee.

Advice shall be sought from the relevant state/territory registration and accreditation body to determine if there is a requirement for an extension to a Registered Training Organisation's scope of registration in relation to the inclusion of such imported unit/s into a qualification. Advice shall be sought from the relevant registration and accreditation body regarding the requirement to record and report the inclusion of units imported under these provisions for the purposes of awarding a qualification.

Where units have been imported under these provisions, this shall be reported to EE-Oz Training Standards so that industry is aware of such units and can consider the endorsement of these into the relevant qualification(s).

Qualification Mapping

Please refer to Volume 1 Preliminary Information for:

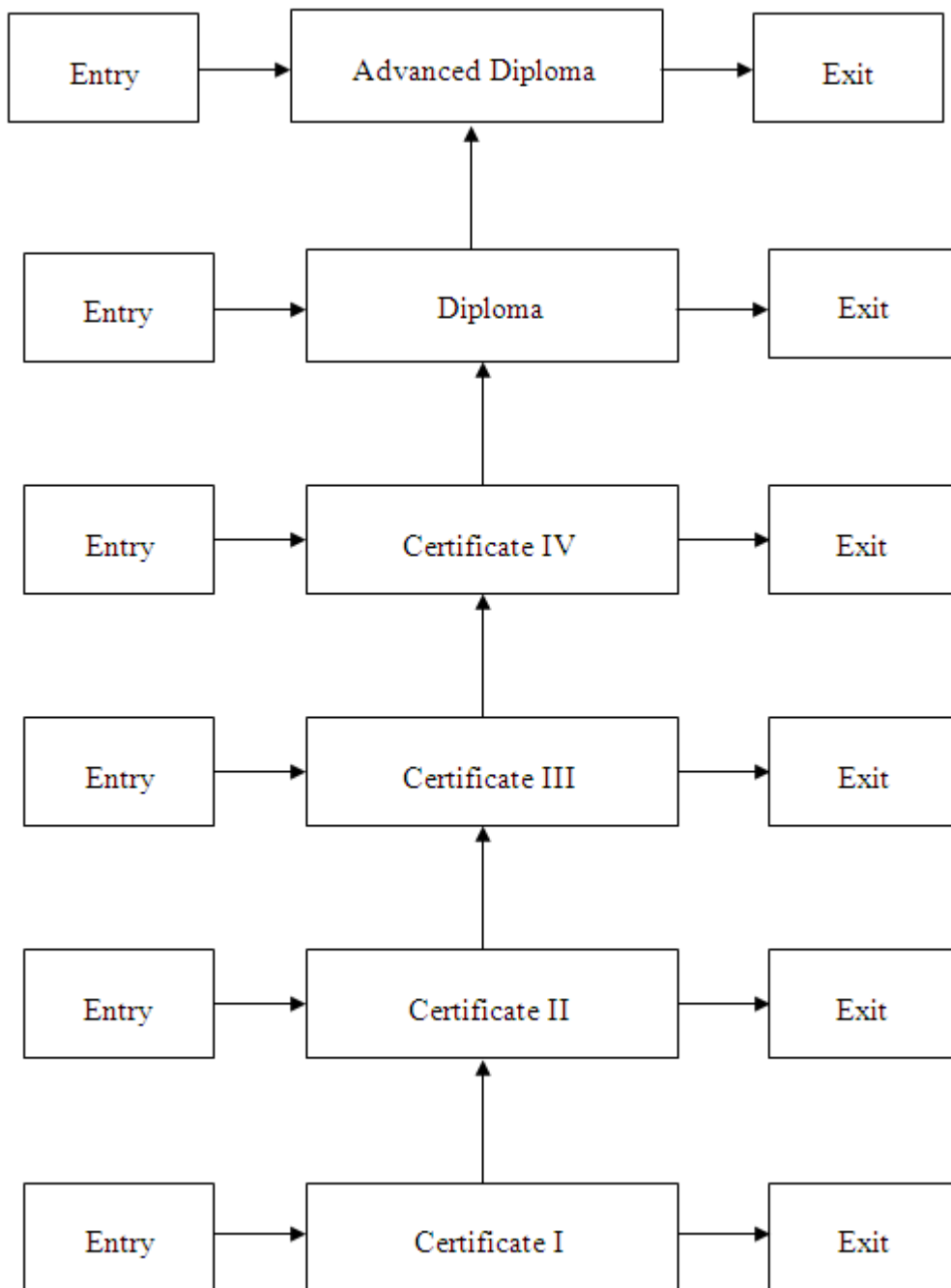
- Modifications History of Qualifications in this Training Package
- Mapping of the qualifications in this version of the Electrotechnology Training Package to previous versions, including equivalences

1.1.02 Qualification Pathways

1.2 Qualification Pathways

This Training Package provides open entry at each of the AQF levels. Arrows indicate the pathways that can be followed no matter at which qualification level you enter.

Entry and Exit Points for Electrotechnology Industry Qualification



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

Articulation pathways

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

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

Open entry is available to all qualifications provided the prospective learner's general education and competency level is equivalent to the outcome of four to five years of secondary school. Additionally, open access provides an option for potential learners to choose a qualification suited to their needs while providing flexibility for recruitment action by employers. Entry requirements must be met. Where entry requirements are not met, a bridging program would be developed by an RTO in consultation with EE-Oz Training. Entry into all qualifications is available through Recognised Prior Learning (RPL) arrangements.

School Based Australian Apprenticeships

Australian Apprenticeships are declared in each State or Territory according to the particular processes of the jurisdiction and requirements identified by industry in the State or Territory. Declarations for particular qualifications as either Traineeships or Apprenticeships are made accordingly and therefore the same qualification may be classified differently between jurisdictions.

Whilst EE-Oz has no control over these processes and declarations, it would recommend that the following qualifications be considered when addressing School based Australian Apprenticeships:

AQF Code	Qualification Title
UEE10110	Certificate I in ElectroComms Skills
UEE22010	Certificate II in Electrotechnology (Career Start)
UEE22107	Certificate II in Sustainable Energy (Career Start)

Access, Equity and Cultural Diversity

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

Language, Literacy and Numeracy

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

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

Australian Apprenticeship – application

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

1.1.03 Qualification Employability Skills Statements

1.3 Qualification Employability Skills Statements

The Employability Skills facets for each AQF level are described below. These are broad industry requirements that may vary depending on qualification packaging rules and electives selected.

Employability Skills Summary - All Qualifications at AQF Level 1.

The following table contains a summary of the Employability Skills required by the Electrotechnology Industry for all UEE11 Electrotechnology Training Package qualifications at AQF level 1, namely;

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, Volume 1, Part 3.

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 UEE11 Electrotechnology Training Package qualifications at AQF level 2, namely;

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, Volume 1, Part 3.\

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 UEE11 Electrotechnology Training Package qualifications at AQF level 3, namely;

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 costing
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, Volume 1, Part 3.

Employability Skills Summary for all Qualifications at AQF Level 4.

The following table contains a summary of the Employability Skills required by the Electrotechnology Industry for all UEE11 Electrotechnology Training Package qualifications at AQF level 4, namely;

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 effectively in oral and written form
Access, read and comprehend safety instructions and procedures
Undertake negotiations if there are conflicts in work requirements and/or priorities
Share industry information
Share essential business information
Document work quotations and tender support schedules
Process approvals/authorities for industry activities
Prepare time sheets
Prepare documentation on particular work tasks including evaluations, reports, timesheets and costing
Prepare and present formal reports to clients and/or co-workers or other related personnel
Teamwork
Work with others by recognising dependencies and using co-operative approaches to optimise work flow and productivity
Work with others to generate ideas and review
Work effectively as an individual and as a member of a team
Work with others to identify work needs and review ideas against those needs
Work with others to evaluate and report on work tasks and outcomes
Work with others to present information to a client and/or co-worker(s)
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 the implementation and maintenance of industry knowledge, standards and requirements
Coach/mentor others and provide feedback

Problem Solving
Use testing and analysis techniques to anticipate and/or clarify problems and plan around them to avoid interruptions to work flows/processes
Apply lateral thinking to generate solutions in response to work problems
Apply analytical techniques to anticipate design issues and product needs
Apply operational research and research management skills
Clarify and identify work issues and apply processes to avoid interruptions to work flow/processes
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
Create new opportunities for the enterprise
Be proactive and apply strategies to overcome work blockages
Adopt a proactive relationship with clients/co-workers
Identify work needs by applying research techniques
Identify and comply with all requirements and standards for work in the Electrotechnology industry
Apply and enterprise best practice and quality systems
Apply and enterprise the best computer systems and applications to ensure quality and efficiency of work tasks and documentation
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 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
Plan and organise activities to enable the most appropriate testing/analysis procedures to be implemented
Plan activities to enable choice of the best computer systems/programs for application on a particular work task
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
Maintain current knowledge of computer systems and capabilities

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
Maintain current knowledge of computer systems programs and there relevant applications
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 document and present information
Use workplace technology to communicate with clients, co-workers and/or other related personnel
Use workplace technology related to particular work tasks including tools, equipment, devices, instruments and materials

Use workplace technology for data analysis/investigation
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
Use workplace technology to collate, organise and maintain work documentation and information
Use computer applications as a management tool

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, Volume 1, Part 3.

Employability Skills Summary for all Qualifications at AQF Level 5.

The following table contains a summary of the Employability Skills required by the Electrotechnology Industry for all UEE11 Electrotechnology Training Package qualifications at AQF level 5, namely;

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 effectively in oral and written form
Access, read and comprehend safety instructions and procedures
Undertake negotiations if there are conflicts in work requirements and/or priorities
Share industry information
Share essential business information

Document work quotations and tender support schedules
Process approvals/authorities for industry activities
Prepare time sheets
Prepare documentation on particular work tasks including evaluations, reports, timesheets and costing
Prepare and present formal reports to clients and/or co-workers or other related personnel
Use aesthetic ideas to plan visual presentation material
Teamwork
Work with others by recognising dependencies and using co-operative approaches to optimise work flow and productivity
Work with others to generate ideas and review
Work effectively as an individual and as a member of a team
Work with others to identify work needs and review ideas against those needs
Work with others to evaluate and report on work tasks and outcomes
Work with others to present information to a client and/or co-worker(s)
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 the implementation and maintenance of industry knowledge, standards and requirements
Coach/mentor others and provide feedback
Problem Solving
Use testing and analysis techniques to anticipate and/or clarify problems and plan around them to avoid interruptions to work flows/processes
Apply lateral thinking to generate solutions in response to work problems
Apply analytical techniques to anticipate design issues and product needs
Apply operational research and research management skills

Apply contingency management techniques to variable circumstances
Clarify and identify work issues and apply processes to avoid interruptions to work flow/processes
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
Create new opportunities for the enterprise
Be proactive and apply strategies to overcome work blockages
Adopt a proactive relationship with clients/co-workers
Identify work needs by applying research techniques
Identify and comply with all requirements and standards for work in the Electrotechnology industry
Apply and enterprise best practice and quality systems
Apply and enterprise the best computer systems and applications to ensure quality and efficiency of work tasks and documentation
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 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

Plan and organise activities to enable the most appropriate testing/analysis procedures to be implemented
Plan activities to enable choice of the best computer systems/programs for application on a particular work task
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
Maintain current knowledge of computer systems programs and there relevant applications
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 document and present information
Use workplace technology to communicate with clients, co-workers and/or other related personnel
Use workplace technology related to particular work tasks including tools, equipment, devices, instruments and materials
Use workplace technology for data analysis/investigation
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
Use workplace technology to collate, organise and maintain work documentation and information
Use computer applications as a management tool

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, Volume 1, Part 3.

Employability Skills Summary for all Qualifications at AQF Level 6.

The following table contains a summary of the Employability Skills required by the Electrotechnology Industry for all UEE11 Electrotechnology Training Package qualifications at AQF level 6, namely;

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 effectively in oral and written form
Access, read and comprehend safety instructions and procedures
Undertake negotiations if there are conflicts in work requirements and/or priorities
Share industry information
Share essential business information
Share essential IT/Computing information
Document work quotations and tender support schedules
Process approvals/authorities for industry activities
Prepare documentation on particular work tasks including evaluations, reports, timesheets and costing
Prepare and present formal reports to clients and/or co-workers or other related personnel
Use aesthetic ideas to plan visual presentation material

Teamwork
Work with others by recognising dependencies and using co-operative approaches to optimise work flow and productivity
Work with others to generate ideas and review
Work effectively as an individual and as a member of a team
Work with others to identify work needs and review ideas against those needs
Work with others to evaluate and report on work tasks and outcomes
Work with others to present information to a client and/or co-worker(s)
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 the implementation and maintenance of industry knowledge, standards and requirements
Coach/mentor others and provide feedback
Problem Solving
Use testing and analysis techniques to anticipate and/or clarify problems and plan around them to avoid interruptions to work flows/processes
Apply lateral thinking to generate solutions in response to work problems
Apply analytical techniques to anticipate design issues and product needs
Apply operational research and research management skills
Apply contingency management techniques to variable circumstances
Clarify and identify work issues and apply processes to avoid interruptions to work flow/processes
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

Create new opportunities for the enterprise
Be proactive and apply strategies to overcome work blockages
Adopt a proactive relationship with clients/co-workers
Identify work needs by applying research techniques
Identify and comply with all requirements and standards for work in the Electrotechnology industry
Apply and enterprise best practice and quality systems
Apply and enterprise the best computer systems and applications to ensure quality and efficiency of work tasks and documentation
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 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
Plan and organise activities to enable the most appropriate testing/analysis procedures to be implemented
Plan activities to enable choice of the best computer systems/programs for application on a particular work task
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
Understand business systems and their relationships
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
Maintain current knowledge of computer systems programs and there relevant applications
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 document and present information
Use workplace technology to communicate with clients, co-workers and/or other related personnel
Use workplace technology related to particular work tasks including tools, equipment, devices, instruments and materials
Use workplace technology for data analysis/investigation
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
Use workplace technology to collate, organise and maintain work documentation and information
Use computer applications as a management tool

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, Volume 1, Part 3.

1.1.04 Qualification Scope, Work Function and Environment

1.4 Qualification Scope, Work Function and Environment

The qualifications described in this section of the Training Package have been designed and structured by industry in consultation with a range of stakeholders including regulators, RTOs and the community. They address identified work functions and work environments and facilitate worthwhile career pathways within the industry.

The qualification structures that follow must be read in conjunction with Volume 1 Part 2 — Competency Standards, Unit Construction.

Certificate I

Characteristics of Learning Outcomes

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

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

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

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

Electrotechnology Industry Qualifications

AQF Code	Certificate I Qualifications	Descriptions and Scopes
UEE10111	Certificate I in ElectroComms Skills	Perform basic work activities, including components, accessories, materials and tools, and follow safety customs for carrying out work in the Communications Industry. Sectors include electrical, communications including video and information technology, lifts, refrigeration and air conditioning energy.

Certificate II

Characteristics of Learning Outcomes

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

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

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

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

Electrotechnology Industry Qualifications

AQF Code	Certificate II Qualifications	Descriptions and Scopes
UEE20111	Certificate II in Split Air-conditioning and Heat Pump Systems	<p>The installation, commissioning and maintenance of split air conditioning and heat pump systems where the maximum plant capacity is less than 100 kW_r.</p> <p>This includes wall hung, floor and ceiling mounted ducted fan coil split systems and wall mounted split systems.</p> <p>This qualification excludes competitive tendering, maintenance, diagnostic/fault finding and the proper installation of commercial split air conditioning and heat pump plant and equipment.</p> <p>Note: 1. The letter "r" denotes "refrigerant" electrical input power.</p> <p>2. The Ozone Protection and Synthetic Gas Management Amendment Bill 2003 and the Ozone Management Regulations apply to the delivery of any training and/or assessment and regulatory requirements shall apply.</p>
UEE20411	Certificate II in Winding and Assembly	Wind, place and connect coils for solenoids following prescribed routines.
UEE20511	Certificate II in Computer Assembly and Repair	Select components and assemble computers and carry out routine hardware repairs.

Electrotechnology Industry Qualifications		
AQF Code	Certificate II Qualifications	Descriptions and Scopes
		known faulty components following
UEE20711	Certificate II in Data and Voice Communications	Select, assemble, set up and maintain a prescribed routine Certification of buildings and premises. It includes Cabler Registration.
UEE20811	Certificate II in Electrical Wholesaling	Take and process orders, check and shelf stock and service customers.
UEE20911	Certificate II in Electronic Assembly	Select components, set up and operate and carry out rework to a prescribed
UEE21011	Certificate II in Fire Alarms Servicing	Select, assemble and set up of basic domestic and commercial premises
UEE21211	Certificate II in Antennae Equipment	Select, assemble, connect and set up and multiple antenna outlets in bu
UEE21311	Certificate II in Remote Area Essential Service	Select, assemble, set up and maintain following prescribed routines refo
UEE21411	Certificate II in Remote Area Power Supply Maintenance	Routine maintenance of remote area battery banks, generator sets, phot primarily for use by, but not exclu
UEE21611	Certificate II in Security Assembly and Setup	Select, assemble and set up of wire systems following prescribe routi
UEE21711	Certificate II in Technical Support	Collect/receive and store stock at and tools, assist in installation, fault activities.
UEE21911	Certificate II in Electronics	Select, assemble, set up and maintain prescribed routines.
UEE22011	Certificate II in Electrotechnology (Career Start)	Work entry program providing gro knowledge for work in any Electro
UEE22111	Certificate II in Sustainable Energy (Career Start)	Work entry program providing gro emerging sustainable energy syste

Certificate III**Characteristics of Learning Outcomes**

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

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

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

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

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

Electrotechnology Industry Qualifications

AQF Code	Certificate III Qualifications	Descriptions and Scopes
UEE30111	Certificate III in Business Equipment	Install, set up, test, fault find, repair and maintain business machines etc
UEE30211	Certificate III in Computer Systems Equipment	Select, install, set up, test, fault find and maintain computer equipment for data storage, personal systems, measurement/analysis and control.
UEE30311	Certificate III in Custom Electronics Installations	Select, install, set up and test surveillance systems and integration aspects for 'intelligent' systems. CEDIA certification level 2
UEE30411	Certificate III in Data and Voice Communications	Select, install, set up, test, fault find and maintain telecommunications and high performance systems on premises. It includes ACMA requirements.
UEE30611	Certificate III in Electrical Machine Repair	Motor, transformer and control gear repair and rewinding
UEE30711	Certificate III in Switchgear and Control Gear	Construction, assembly and wiring of switchgear and control gear

Electrotechnology Industry Qualifications		
AQF Code	Certificate III Qualifications	Descriptions and Scopes
UEE30811	Certificate III in Electrotechnology Electrician	Select, install, set up, test, fault find and repair electrical systems and equipment in building and industrial premises in accordance with requirements for an 'Electrician's
UEE30911	Certificate III in Electronics and Communications	Select, install, set up, test, fault find and repair electronic equipment and devices at component level for communications, audio, video and security and custom installations
UEE31011	Certificate III in Fire Protection Control	Installation and set up of fire protection systems in residential and industrial premises.
UEE31111	Certificate III in Gaming Electronics	Select, install, set up, test, fault find and repair electronic machines used in registered clubs and gaming machines used in electronic game
UEE31211	Certificate III in Instrumentation and Control	Select, install, set up, test, fault find and repair electronic devices for measurement and recording of physical phenomenon and related process c
UEE31411	Certificate III in Security Equipment	Installation and pre-commissioning of security systems in multiple, commercial in
UEE31511	Certificate III in Rail – Communications and Networks	Select, install, commission, fault find and repair telecommunications networks in ra
UEE32011	Certificate III in Renewable Energy - ELV	Select, install, set up, test, fault find and repair renewable energy equipment and systems. It is covered by licensing requirements of the Electrical Regulatory Advisory Council (ERAC) for an 'ELV
UEE32111	Certificate III in Appliance Service	Set up, service and repair electrical appliances and electives in gas appliances Note: The Ozone Protection and Substances Management Amendment Bill 2003 may apply to the delivery of any training and/or assessment and regulatory requirements shall l
UEE32211	Certificate III in Air-conditioning and Refrigeration	Select components, install, set up, test, fault find and repair refrigeration systems and equipment for preservation and air conditioning a buildings and premises. It includes purchasing and handling refrigeran

Electrotechnology Industry Qualifications		
AQF Code	Certificate III Qualifications	Descriptions and Scopes
UEE33011	Certificate III in Electrical Fitting	<p>This qualification provides competence to erect, operate, test, fault find, alter and repair electrical equipment. It includes electrical wiring work on electrical equipment, assembling, maintaining, terminating and repairing electrical components within a plant. It is not authorised to install any electrical equipment or electrical installation as prescribed in AS/NZS 3000.</p> <p>Electrical equipment means any apparatus, fitting, cable, conduit or apparatus used for the control (or that is intended to generate) of electricity above extra low voltage.</p>

<p>Certificate IV</p> <p>Characteristics of Learning Outcomes</p> <p>Knowledge and competencies covering a broad range of activities performed in a variety of complex and non-routine situations. Guidance are involved in organising activities. In the application and planning of the skills and in contributing to the safety of others or contingency situations.</p> <p>Applications will include evaluating and analysing current practices, developing new criteria and procedures and taking responsibility for and limited organisation of others.</p> <p>Distinguishing Features of Learning Outcomes</p> <p>Do the competencies enable an individual with this qualification to:</p> <ul style="list-style-type: none"> • demonstrate understanding of a broad knowledge base incorporating some theoretical concepts • apply solutions to a defined range of unpredictable problems • identify and apply skill and knowledge areas to a wide variety of contexts, with depth in some areas • identify, analyse and evaluate information from a variety of sources • take responsibility for own outputs in relation to specified quality standards • take limited responsibility for the quantity and quality of the output of others
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Electrotechnology Industry Qualifications		
AQF Code	Certificate IV Qualifications	Descriptions and Scopes
UEE40111	Certificate IV in Computer Systems	<p>Select, install, commission, fault find, maintain and repair communications and control aspects of computer systems. Control of systems for access, surveillance and operation of manufacturing, building and other systems.</p>

Electrotechnology Industry Qualifications

AQF Code	Certificate IV Qualifications	Descriptions and Scopes
		and personal computer and network
UEE40211	Certificate IV in Electrical – Data and Voice Communications	Select, install, commission, fault find and repair data and voice communications systems and equipment. It includes ERAC requirements for a licence and requirements for Open Cabler Registration.
UEE40311	Certificate IV in Electrical Installation Inspection and Audits	Mandatory and contractual inspection and auditing of entities for compliance with the Electrical Safety Act 1988.
UEE40411	Certificate IV in Electrical – Instrumentation	Select, install, commission, fault find and repair instrumentation equipment in buildings and instrumentation systems and core instrumentation and control. It includes ERAC requirements for a licence.
UEE40511	Certificate IV in Electrical – Air-conditioning Systems	Select, install, commission, fault find and repair air conditioning equipment in buildings and process air conditioning equipment. It includes ERAC requirements for a licence and handling refrigerants.
UEE40611	Certificate IV in Electrotechnology – Systems Electrician	Select, install, commission, fault find and repair electrical equipment with options, typical electrical machines; electrical inspection; safety and supply/distribution.
UEE40711	Certificate IV in Electronics and Communications	Select, install, commission, fault find and repair electronic systems, computer and network hardware and communications systems and equipment.
UEE40811	Certificate IV in Electrical – Fire Protection Control Systems	Select, install, commission, fault find and repair fire protection control systems in buildings. It includes ERAC requirements for a licence.
UEE40911	Certificate IV in Industrial Electronics and Control	Select, install, commission, fault find and repair industrial systems for the control of plant, machinery and equipment.
UEE41011	Certificate IV in Energy Management and Control	This qualification provides competence in the reduction of energy in buildings and industrial systems in which energy is controlled in the past by new control equipment or by the modification of existing equipment.

Electrotechnology Industry Qualifications		
AQF Code	Certificate IV Qualifications	Descriptions and Scopes
UEE41111	Certificate IV in Electrical – Lift Systems	Select, install, commission, fault find and associated equipment. It includes 'Electrician's licence'.
UEE41211	Certificate IV in Electrical – Rail Signalling	Select, install, commission, fault find equipment and systems. It includes 'Electrician's licence'.
UEE41511	Certificate IV in Video and Audio Systems	Service high end audio, video, display
UEE41611	Certificate IV in Renewable Energy	Select, install, commission, fault find energy sources and equipment for
UEE41711	Certificate IV in Rail – Communications and Network Systems	Select, install, commission, fault find telecommunications networks in rail
UEE41911	Certificate IV in Electrical – Renewable Energy	Select, install, set up, test, fault find systems and equipment in building requirements for an 'Electrician's licence' install, set up, test, fault find, repair equipment and systems.
UEE42011	Certificate IV in Electrical – Photovoltaic Systems	Select, install, set up, test, fault find systems and equipment in building requirements for an 'Electrician's licence' install, set up, test, fault find, repair and associated equipment
UEE42111	Certificate IV in Electrotechnology – Electrical Contracting	This qualification provides competence in electrical contracting business. It includes regulations for an electrical contractor
UEE42211	Certificate IV in Instrumentation and Control	This qualification provides competence in fault find, repair, maintain and commission measurement and recording of physical related process control systems.
UEE42611	Certificate IV in Hazardous areas - Electrical	This qualification provides competence in installation, commissioning maintenance of protected equipment and systems for and processes. The qualification provides with explosion protections techniques to coal mining, gas and dust atmosphere requirements for an 'Electrician's licence' install, set up, test, fault find, repair

Electrotechnology Industry Qualifications		
AQF Code	Certificate IV Qualifications	Descriptions and Scopes
		energy equipment and systems.
UEE42711	Certificate IV in Refrigeration and Air-conditioning Servicing	High level fault diagnosis and rectification and maintenance of refrigeration systems in commercial food storage and processing and distribution equipment and special requirements for purchasing and handling refrigerants.
UEE42811	Certificate IV in Air-conditioning Systems Energy Management and Control	This qualification provides competence in the reduction of energy in buildings and systems in which energy is controlled in the past or by new control equipment or by the modification of existing. It includes regulatory requirements for purchasing and handling refrigerants.
UEE42911	Certificate IV in Refrigeration and Air-conditioning Systems	This qualification provides the competence to select and install equipment for basic commercial and residential air conditioning applications. It includes requirements for purchasing and handling refrigerants.
UEE43011	Certificate IV in Electrical Equipment and Systems	This qualification provides competence to erect, operate, test, fault find, alter and maintain electrical equipment. It includes electrical wiring work on electrical equipment, assembling, maintaining, terminating and testing electrical components within a plant. It does not authorise to install any electrical equipment or electrical installation as prescribed in AS/NZS 3000. Electrical equipment means any apparatus, fitting, cable, conduit or apparatus used for the control of electricity (or that is intended to generate electricity) above extra low voltage.
UEE43111	Certificate IV in Energy Efficiency and Assessment	This qualification provides competence to conduct energy audits in residential and retail dwellings and commercial buildings and to develop energy efficiency measures. It addresses the environmental and legal requirements for energy audits and fundamental energy audit methods and provides solutions of sustainability and financial viability.
		The core competencies of this qualification meet the requirements for ERAC requirements.

Electrotechnology Industry Qualifications		
AQF Code	Certificate IV Qualifications	Descriptions and Scopes
UEE43211	Certificate IV in Industrial Automation and Control	This qualification provides competence in the installation, commissioning, testing, fault finding, repair and maintenance of industrial automation systems, associated circuits and components. It includes the design and implementation of plant maintenance programs and the supervision of process staff.

Diploma

Characteristics of Learning Outcomes

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

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

Applications involve participation in development of strategic initiatives as well as personal responsibility and technical operations or organising others. It may involve participation in teams, including teams concerned with group or team coordination may be involved.

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

Distinguishing Features of Learning Outcomes

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

- demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial practical experience
- analyse and plan approaches to technical problems or management requirements
- transfer and apply theoretical concepts and/or technical or creative skills to a range of situations
- evaluate information, using it to forecast for planning or research purposes
- take responsibility for own outputs in relation to broad quantity and quality parameters
- take some responsibility for the achievement of group outcomes

Electrotechnology Industry Qualifications		
AQF Code	Diploma Qualifications	Descriptions and Scopes
UEE50111	Diploma of Computer Systems Engineering	Develop, select, install, commission, test, maintain and repair computer networks and systems
UEE50211	Diploma of Electrical and Instrumentation	Select, install, commission, maintain and repair electrical, instrumentation and control systems. Includes ERAC requirements for a range of electrical systems.
UEE50311	Diploma of Electrical and Refrigeration and Air-conditioning	Select, install, commission, maintain and repair refrigeration systems and equipment.

Electrotechnology Industry Qualifications

		storage and preservation and air conditioning equipment and special applications. This qualification includes ERAC requirements for a range of electrical equipment and includes regulatory requirements for purchase and installation of electrical equipment.
UEE50411	Diploma of Electrical Engineering	Develop, select, commission, maintain and repair advanced electrical equipment and systems in accordance with requirements for an 'Electrician's Licence'.
UEE50511	Diploma of Electronics and Communications Engineering	Develop, select, commission, maintain and repair electronic components/sub-assemblies and systems in accordance with requirements for an 'Electrician's Licence'.
UEE50711	Diploma of Renewable Energy Engineering	Develop, select, commission, maintain and repair large scale renewable energy equipment and systems in accordance with requirements for an 'Electrician's Licence'.
UEE50811	Diploma of Research and Development	Assist professional in planning, research and development of electrotechnology products and systems.
UEE50911	Diploma of Industrial Electronics and Control Engineering	Develop, select, commission, maintain and repair electronic equipment and systems for the control of machines and processes.
UEE51011	Diploma of Instrumentation and Control Engineering	This qualification provides competence to develop, select, commission, maintain and repair instrumentation and systems for the measurement and control of physical/chemical phenomena in industrial systems.
UEE51111	Diploma of Engineering Technology - Refrigeration and Air-conditioning	This qualification provides enabling knowledge and skills to develop, select, commission, maintain and repair heating, ventilation and air conditioning systems.
UEE51211	Diploma of Air-conditioning and Refrigeration Engineering	Develop systems, select equipment and components, commission, maintain and repair air conditioning and refrigeration systems. This qualification includes regulatory requirements for the use of refrigerants.
UEE53011	Diploma in Electrical Equipment and Systems Engineering	This qualification provides competence to develop, select, commission, maintain and diagnose electrical equipment and systems.

Advanced Diploma

Characteristics of Learning Outcomes

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

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

Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to the development of procedures.

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

Distinguishing Features of Learning Outcomes

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

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

Electrotechnology Industry Qualifications

AQF Code	Advanced Diploma Qualifications	Descriptions and Scopes
UEE60211	Advanced Diploma of Electronics and Communications Engineering	Design and validate/evaluate electronic equipment and systems, compute risk, estimate and manage project
UEE60411	Advanced Diploma of Computer Systems Engineering	Design, install/validate/evaluate computer systems, manage risk, estimate and provide technical advice/sales.
UEE60611	Advanced Diploma of Industrial Electronics and Control Engineering	Design and validate/evaluate control systems, manage risk, estimate and manage project
UEE60911	Advanced Diploma of Renewable Energy Engineering	Design and validate/evaluate renewable energy systems, manage risk, estimate and provide technical advice/sales.
UEE61111	Advanced Diploma of Automated Systems Maintenance Engineering	Monitor/validate/evaluate automated systems, manage risk, develop and manage maintenance technical advice
UEE61211	Advanced Diploma of Engineering – Explosion	Design and validate/evaluate electrical systems, manage risk, estimate and manage project

Electrotechnology Industry Qualifications

AQF Code	Advanced Diploma Qualifications	Descriptions and Scopes
	protection	technical advice/sales. It includes protection necessary for areas wh
UEE61511	Advanced Diploma of Instrumentation and Control Engineering	This qualification provides comp validate/evaluate process control estimate and manage projects an also provides competencies to in commission, maintain, diagnose systems
UEE61711	Advanced Diploma of Engineering Technology - Electronic	Prepare to design and validate/ev equipment and systems and prov
UEE61811	Advanced Diploma of Engineering Technology - Computer Systems	Prepare to design, install/validate networks and systems and provid
UEE62011	Advanced Diploma of Engineering Technology - Renewable Energy	Prepare to design and validate/ev and systems and provide technic
UEE62111	Advanced Diploma of Engineering Technology - Electrical	Prepare to design and validate/ev systems and provide technical ac
UEE62211	Advanced Diploma of Electrical – Engineering	This qualification provides comp validate/evaluate electrical equip estimate and manage projects an It develops competencies in the mathematics, science, engineering Practice, engineering design prac physical, human and financial re The core competencies of this qu requirements for Engineering As Australia and ERAC requiremen Participants seeking Engineers A that their training provider is acc Engineering Education Program
UEE62311	Advanced Diploma of Electrical Engineering – Coal Mining	This qualification provides comp validate/evaluate coal mining ele manage risk, estimate and manag advice/sales. It develops competencies in the mathematics, science, engineering Practice, engineering design prac physical, human and financial re The core competencies of this qu

Electrotechnology Industry Qualifications

AQF Code	Advanced Diploma Qualifications	Descriptions and Scopes
UEE62411	Advanced Diploma of Engineering Technology - Air-conditioning and Refrigeration	<p>requirements for Engineering Associates in Australia and ERAC requirements for Engineering Associates. Participants seeking Engineers Australia accreditation should ensure that their training provider is accredited under the Engineering Education Programs Accreditation Scheme.</p> <p>Prepare to design and validate/evaluate air-conditioning equipment and systems and provide technical advice/sales.</p>
UEE62511	Advanced Diploma of Air-conditioning and Refrigeration Engineering	<p>Design and validate/evaluate refrigeration equipment and systems, manage refrigeration systems and provide technical advice/sales for purchasing and handling refrigerants. It develops competencies in the core competencies of mathematics, science, engineering design practice, engineering design practice, engineering design practice, physical, human and financial resources management. Conditioning engineering. It includes purchasing and handling refrigerants. The core competencies of this qualification are consistent with the requirements for Engineering Associates in Australia. Participants seeking Engineers Australia accreditation should ensure that their training provider is accredited under the Engineering Education Programs Accreditation Scheme.</p>
UEE63011	Advanced Diploma in Electrical Systems Engineering	<p>This qualification provides competencies to design, validate/evaluate, select, commission and test electrical systems, faults/malfunctions on advanced electrical systems. Also, provides skills to manage electrical systems and provide technical advice/sales. It develops competencies in the core competencies of mathematics, science, engineering design practice, engineering design practice, physical, human and financial resources management.</p>

1.1.05 Qualifications and Packaging Rules

1.5 Qualifications and Packaging Rules

The following table details the full range of qualifications in this version of the Electrotechnology Training Package, the completion requirements for each qualification and their respective structure and composition. These qualifications have been designed to comply with the National Quality Council's Packing Rules for Flexibility initiative.

Each qualification is described by the number of core and elective weighted points required for completion and issue of the qualification under the AQF.

Respective qualifications have at least two Elective Groups from which elective competencies may be drawn. Where a range of weighting points is set for a group e.g. 60-120, the lower number indicates both the minimum weighting points required from that particular elective group for completion and the larger number is the maximum required weighting points which may be selected from that group for a valid qualification completion.

Where the lower number for a group is 0 no competencies are required to be selected from that group, however, sufficient weighted points must be selected from other groups to meet the required total elective weighted points for completion.

Note: Individuals may select elective units to a weighting point total greater than the maximum specified for completion from a particular group. Where this is done weighted points in excess of the specified maximum cannot be counted for completion of the qualification.

Where a Competency Standard Unit has pre-requisite Competency Standards Unit requirements, such pre-requisite units shall be completed and their weighted points counted toward qualification completion.

Full details of each qualification follow Table 1 -Qualification Completion Values, below.

Table 1 -Qualification Completion Values

Qualification Code	Qualification Title	Total Core	Total Elective	Elective Units Groups				
				Group A	Group B	Group C	Group D	Group E
UEE10111	Certificate I in ElectroComms Skills	120	60	0-30	30-60			
UEE20111	Certificate II in Split Air-conditioning and Heat Pumps Systems	340	20	0-20	0-20			
UEE20411	Certificate II in Winding and Assembly	200	160	0-60	100-160			
UEE20511	Certificate II in Computer Assembly and Repair	200	160	0-60	100-160			

UEE20711	Certificate II in Data and Voice Communications	380	40	0-20	20-40			
UEE20811	Certificate II in Electrical Wholesaling	160	200	0-60	140-200			
UEE20911	Certificate II in Electronic Assembly	220	140	0-60	80-140			
UEE21011	Certificate II in Fire Alarms Servicing	220	140	0-60	80-140			
UEE21211	Certificate II in Antennae Equipment	240	120	0-60	60-120			
UEE21311	Certificate II in Remote Area Essential Service	160	200	0-160	40-200			
UEE21411	Certificate II in Remote Area Power Supply Maintenance	200	160	0-60	100-160			
UEE21611	Certificate II in Security Assembly and Set-up	240	120	0-60	60-120			
UEE21711	Certificate II in Technical Support	200	160	0-60	100-160			
UEE21911	Certificate II in Electronics	240	120	0-60	60-120			
UEE22011	Certificate II in Electrotechnology (Career Start)	220	140	0-60	80-140			
UEE22111	Certificate II in Sustainable Energy (Career Start)	200	160	0-60	100-160			
UEE30111	Certificate III in Business Equipment	700	360	0-180	180-360			
UEE30211	Certificate III in Computer Systems Equipment	560	500	0-150	350-500			
UEE30311	Certificate III in Custom Electronics Installations	600	460	0-150	310-460			

UEE30411	Certificate III in Data and Voice Communications	740	320	0-100	220-320			
UEE30611	Certificate III in Electrical Machine Repair	880	180	0-60	120-180			
UEE30711	Certificate III in Switchgear and Controlgear	900	160	0-60	180-160			
UEE30811	Certificate III in Electrotechnology Electrician	920	140	0-60	80-140			
UEE30911	Certificate III in Electronics and Communications	680	380	0-180	200-380			
UEE31011	Certificate III in Fire Protection Control	690	370	0-170	200-370			
UEE31111	Certificate III in Gaming Electronics	700	360	0-160	200-360			
UEE31211	Certificate III in Instrumentation and Control	920	140	0-60	80-140			
UEE31411	Certificate III in Security Equipment	640	420	0-170	250-420			
UEE31511	Certificate III in Rail – Communications and Networks	680	380	0-170	210-380			
UEE32011	Certificate III in Renewable Energy - ELV	700	360	0-170	190-360			
UEE32111	Certificate III in Appliance Service	840	220	0-100	120-220			
UEE32211	Certificate III in Air-conditioning and Refrigeration	1000	60	0-30	30-60			

UEE33011	Certificate III in Electrical Fitting	820	240	0-60	180-240			
UEE40111	Certificate IV in Computer Systems	600	680	0-220	0-500	180-680		
UEE40211	Certificate IV in Electrical – Data and Voice Communications	1120	160	0-80	0-80	80-160		
UEE40311	Certificate IV in Installation Inspection and Audits	1060	220	0-80	0-110	110-220		
UEE40411	Certificate IV in Electrical – Instrumentation	1160	120	0-60	0-60	60-120		
UEE40511	Certificate IV in Electrical – Air-conditioning Split Systems	1120	160	0-80	0-80	80-160		
UEE40611	Certificate IV in Electrotechnology – Systems Electrician	960	320	0-100	0-100	220-320		
UEE40711	Certificate IV in Electronics and Communications	720	560	0-220	0-360	200-560		
UEE40811	Certificate IV in Electrical – Fire Protection Control Systems	1180	100	0-60	0-60	40-100		
UEE40911	Certificate IV in Industrial Electronics and Control	1080	200	0-100	0-100	100-200		
UEE41011	Certificate IV in Energy Management and Control	980	300	0-100	0-100	200-300		
UEE41111	Certificate IV in Electrical – Lift Systems	1200	80	0-20	0-20	60-60		

UEE41211	Certificate IV in Electrical – Rail Signalling	1280	70	0-30	0-40	30-70		
UEE41511	Certificate IV in Video and Audio Systems	840	440	0-220	0-220	220-440		
UEE41611	Certificate IV in Renewable Energy	740	540	0-220	0-320	220-380		
UEE41711	Certificate IV in Rail – Communications and Network Systems	720	560	0-220	0-340	220-560		
UEE41911	Certificate IV in Electrical – Renewable Energy	1120	160	0-50	0-120	40-160		
UEE42011	Certificate IV in Electrical – Photovoltaic systems	1100	180	0-90	0-90	90-180		
UEE42111	Certificate IV in Electrotechnology – Electrical Contracting	1040	240	0-120	0-120	120-240		
UEE42211	Certificate IV in Instrumentation and Control	1080	200	0-60	0-100	100-200		
UEE42611	Certificate IV in Hazardous areas - Electrical	980	300	0-60	0-80	220-300		
UEE42711	Certificate IV in Air-conditioning and Refrigeration Servicing	1100	180	0-90	0-90	90-180		
UEE42811	Certificate IV in Air-conditioning Systems Energy Management and Control	1120	160	0-80	0-80	80-160		
UEE42911	Certificate IV in Refrigeration and Air-conditioning Systems	1230	50	0-20	0-30	20-50		
UEE43011	Certificate IV in Electrical Equipment	860	420	0-60	0-200	220-420		

	and Systems							
UEE43111	Certificate IV in Energy Efficiency and Assessment	1020	260	0-120	0-120	140-260		
UEE43211	Certificate IV in Industrial Automation and Control	520	760	0-220	0-540	220-760		
UEE50111	Diploma of Computer Systems Engineering	140	1460	0-270	0-880	0-580	580-1040	
UEE50211	Diploma of Electrical and Instrumentation	1520	80	0-20	0-20	0-20	60-80	
UEE50311	Diploma of Electrical and Refrigeration and Air-conditioning	1620	80	0-20	0-20	0-20	40-60	
UEE50411	Diploma of Electrical Engineering	1000	600	0-270	0-100	0-240	260-600	
UEE50511	Diploma of Electronics and Communications Engineering	140	1460	0-270	0-920	260-580	280-1200	
UEE50711	Diploma of Renewable Energy Engineering	1080	520	0-260	0-100	0-240	260-340	
UEE50811	Diploma of Research and Development	720	880	0-270	0-500	0-240	140-240	
UEE50911	Diploma of Industrial Electronics and Control Engineering	1120	480	0-220	0-100	0-120	260-480	
UEE51011	Diploma of Instrumentation and Control Engineering	1120	480	0-180	0-100	0-120	260-480	
UEE51111	Diploma of Engineering Technology - Refrigeration and Air-conditioning	920	680	0-270	0-100	60-170	270-620	
UEE51211	Diploma of Air-conditioning and Refrigeration	1470	130	0-60	0-30	0-50	50-130	

	Engineering							
UEE53011	Diploma of Electrical Systems Engineering	960	640	0-270	0-140	0-240	260-640	
UEE60211	Advanced Diploma of Electronics and Communications Engineering	280	1880	0-360	0-900	0-280	0-260	520-1
UEE60411	Advanced Diploma of Computer Systems Engineering	280	1880	0-360	0-900	0-280	0-280	420-1
UEE60611	Advanced Diploma of Industrial Electronics and Control Engineering	1800	360	0-180	0-60	0-100	0-60	160-3
UEE60911	Advanced Diploma of Renewable Energy Engineering	1820	340	0-170	0-60	0-100	0-60	160-3
UEE61111	Advanced Diploma of Automated Systems Maintenance Engineering	1120	1040	0-360	0-280	0-220	0-220	320-1
UEE61211	Advanced Diploma of Engineering – Explosion protection	1780	380	0-170	0-60	0-80	0-60	160-3
UEE61511	Advanced Diploma of Instrumentation and Control Engineering	1740	420	0-170	0-80	0-80	0-80	180-4
UEE61711	Advanced Diploma of Engineering Technology - Electronics	1160	1000	0-360	0-200	0-200	0-300	280-1
UEE61811	Advanced Diploma of Engineering Technology - Computer Systems	1160	1000	0-360	0-200	0-200	0-300	280-1
UEE62011	Advanced Diploma of Engineering Technology -	1260	900	0-360	0-240	0-220	0-220	280-3

	Renewable Energy							
UEE62111	Advanced Diploma of Engineering Technology - Electrical	1440	720	0-360	0-160	0-220	0-220	200-7
UEE62211	Advanced Diploma of Electrical - Engineering	1680	480	0-220	0-60	0-100	0-60	260-4
UEE62311	Advanced Diploma of Electrical Engineering – Coal Mining	1840	320	0-160	0-60	0-100	0-60	160-3
UEE62411	Advanced Diploma of Engineering Technology - Air-conditioning and Refrigeration	1360	800	0-350	0-100	120-320	200-360	360-4
UEE62511	Advanced Diploma of Air-conditioning and Refrigeration Engineering	1910	250	0-120	0-30	0-60	0-120	120-2
UEE63011	Advanced Diploma of Electrical Systems Engineering	1580	580	0-220	0-160	0-160	0-160	200-5

1.1.06 Skill Sets

1.6 Skill Sets

Definition

Skill sets are defined as single units of competency, or combinations of units of competency from an endorsed Training Package, which link to a licence or regulatory requirement, or defined industry need.

Skill sets are a way of publicly identifying logical groupings of units of competency which meet an identified need or industry outcome. Skill sets are not qualifications.

Where skill sets are identified in a Training Package, the Statement of Attainment can set out the competencies a person has achieved in a way that is consistent and clear for employers and others. This is done by including the wording ‘these competencies meet [insert skill set title or identified industry area] need’ on the Statement of Attainment. This wording applies only to skill sets that are formally identified as such in the endorsed Training Package. See the 2011 edition of the AQF Implementation Handbook for advice on wording on Statements of Attainment. See:

http://www.aqf.edu.au/Portals/0/Documents/Handbook/AQF_Handbook_07.pdf

Identified Skill Sets

1.2.01 Competency Standards

Volume 1 Part 2

2.1 Competency Standards

This section explains competency, how competency standards are developed and the industry coverage they can apply to, and the format and construction of individual competency standard units.

What is competency?

A competency comprises the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance required in the workplace. This definition of competency standard includes:

- what is expected of an employee in the workplace rather than on the learning process which embodies the ability to transfer and apply skills and knowledge to new situations and environments
- an emphasis on outcomes and on the application of skills and knowledge, not just specification
- what people are able to do and their ability to do it in a range of contexts, e.g. maintain and use networks of suppliers, government agencies.

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 and knowledge and attitudes relevant to effective participation in an industry, industry sector or enterprise.

Competency covers all aspects of workplace performance and involves performing individual tasks; managing a range of different tasks; responding to contingencies or breakdowns; and dealing with the responsibilities of the workplace, including working with others. Workplace competency requires the ability to apply relevant skills, knowledge and attitudes consistently over time and in the required workplace situations and environments. In line with this concept of competency, Training Packages focus on what is expected of a competent individual in the workplace as an outcome of learning, rather than focussing on the learning process itself.

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 qualifications.

1.2.02 Contextualisation of Competency Standard Units by RTOs

2.2 Contextualisation of Competency Standard Units by RTOs

Registered Training Organisations (RTOs) may contextualise units of competency to reflect local outcomes provided that no requirements and/or completion rules of the Training Package are infringed. This includes any prevailing regulatory requirements that may apply to the competency standard units. Contextualisation, provided it does not dilute in any way the units of competency, could involve additions or amendments to the unit of competency to suit particular delivery methods, learner profiles, specific enterprise equipment requirements, or to otherwise meet local needs. However, the integrity of the overall intended outcome of the unit of competency must be maintained.

Any contextualisation of units of competency in this endorsed Training Package must be within the bounds of the following advice. In contextualising competency standard units, RTOs:

- must not contravene, diminish or detract from any regulatory/licensing arrangement that may apply to the unit, or its related delivery arrangements
- must not remove or add to the number and content of Elements and Performance Criteria
- may add specific industry terminology to Performance Criteria where this does not distort or narrow the competency outcomes
- may make amendments and additions to the Range Statement as long as such changes do not diminish the breadth of application of the competency or reduce its portability
- may add detail to the Evidence Guide in areas such as the critical aspects of evidence or resources and infrastructure required where these expand the breadth of the competency but do not limit its use.

1.2.03 Components of Units of Competency

2.3 Components of Units of Competency

The components of units of competency are summarised below, in the order in which they appear in each unit of competency:

Unit Title

The unit title is a succinct statement of the outcome of the competency standard unit. Each unit title is unique, both within and across Training Packages.

Unit Descriptor

The scope/descriptor broadly communicates the content and purpose of the competency standard unit and the skill area it addresses. Where units have been contextualised from competency standard units in other endorsed Training Package, summary information is provided.

Employability Skills

This sub-section contains a statement that the unit contains Employability skills.

Prerequisite Competencies and Literacy and Numeracy (optional)

If there are any competency standard units that must be completed before or concurrently, these will be listed. In addition, there may be a sub-section on entry advice related to levels of language and numeracy applicable to the unit.

Application of the Unit

This sub-section fleshes out the scope and purpose of the competency standard, and its operation in different contexts, e.g. showing how it applies in the workplace. It may include a sub-section or second paragraph that describes its relationship with other industry sectors and any licensing application or requirements, such as a licence to practice.

Competency Field (Optional)

The competency field either reflects the way the competency standard units are categorised in the Training Package or denotes the industry sector, specialisation or function. It is an optional component of the competency standard unit.

Sector (optional)

The industry sector is a further categorisation of the competency field and identifies the next classification, for example an elective or supervision field.

Elements of Competency

The elements of competency are the basic building blocks of the competency standard unit. They describe, in terms of outcomes, the significant functions and tasks that make up the competency.

Performance Criteria

The Performance Criteria specify the required performance in relevant tasks, roles, processes, skills and in the applied knowledge that enables competent performance. They are usually written in passive voice. Critical terms or phrases may be written in bold italics and then defined in the Range Statement, in the order of their appearance in the Performance Criteria.

Required Essential Knowledge and Associated Skills

In the competency standard units, essential knowledge and associated skills (EKAS) may be identified separately or combined. Knowledge identifies what a person needs to know to perform the work in an informed and effective manner. Skills describe the application of knowledge to situations where understanding is converted into a workplace outcome and includes the ability to transfer it to new situations and environments.

In this Training Package essential knowledge and associated skills (EKAS) have been separated from the competency standard units to facilitate user-friendliness for interpretation, applicability and future maintenance. Within the EKAS section of each unit clause numbers and titles refer learners to the relevant EKAS details in the separate section in Volume 2. All assessment evidence activities and reporting processes shall include and confirm achievement of the relevant EKAS specification(s).

Range Statement

The Range Statement provides a context for the competency standard unit describing essential operating conditions for training and assessment related to; the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts. The meanings of key terms used in the Performance Criteria are also explained in the Range Statement.

Evidence Guide

The evidence guide is an integral part of the competency standard unit as it provides the assessment information to the RTO assessors about the critical aspects and how the competency may be demonstrated. The evidence guide does this by providing a range of evidence for the assessor to use in making determinations and by providing the assessment context. The evidence guide describes:

- conditions under which competency must be assessed, including variables such as the assessment environment or necessary equipment
- relationships with the assessment of any other competency standard units
- suitable methodologies for conducting assessment, including the potential for workplace simulation
- resource implications, e.g. access to particular equipment, infrastructure or situations
- how consistency in performance can be assessed over time, various contexts and with a range of evidence
- the required critical aspects and underpinning knowledge and skills
- application against relevant legislation, regulation, industrial instruments, codes of practice, guidelines and advisory standards. This also includes anti-discrimination and equal employment opportunity statutes (encompassing application of access, equity and cultural diversity principles associated with under-represented groups).

1.2.04 Employability Skills in Units of Competency

2.4 Employability Skills in Units of Competency

The detail and application of Employability Skills facets will vary according to the job-role requirements of each industry. In developing Training Packages, industry stakeholders are consulted to identify appropriate facets of Employability Skills which are incorporated into the relevant units of competency and qualifications.

Employability Skills are not a discrete requirement contained in units of competency (as was the case with Key Competencies). Employability Skills are specifically expressed in the context of the work outcomes described in units of competency and will appear in elements, performance criteria, range statements and evidence guides. As a result, users of Training Packages are required to review the entire unit of competency in order to accurately determine Employability Skills requirements.

How Employability Skills relate to the Key Competencies

The eight nationally agreed Employability Skills now replace the seven Key Competencies in Training Packages. Trainers and assessors who have used Training Packages prior to the introduction of Employability Skills may find the following comparison useful.

Employability Skills	Mayer Key Competencies
Communication	Communicating ideas and information
Teamwork	Working with others and in teams
Problem solving	Solving problems Using mathematical ideas and techniques
Initiative and enterprise	
Planning and organising	Collecting, analysing and organising information Planning and organising activities

Self-management

Learning

Technology Using technology

When analysing the above table it is important to consider the relationship and natural overlap of Employability Skills. For example, using technology may involve communication skills and combine the understanding of mathematical concepts.

Explicitly embedding Employability Skills in units of competency

This Training Package seeks to ensure that industry-endorsed Employability Skills are explicitly embedded in units of competency. The application of each skill and the level of detail included in each part of the unit will vary according to industry requirements and the nature of the unit of competency.

Employability Skills must be both explicit and embedded within units of competency. This means that Employability Skills will be:

- embedded in units of competency as part of the other performance requirements that make up the competency as a whole
- explicitly described within units of competency to enable Training Packages users to identify accurately the performance requirements of each unit with regards to Employability Skills.

This Training Package also seeks to ensure that Employability Skills are well-defined and written into units of competency so that they are apparent, clear and can be delivered and assessed as an essential component of unit work outcomes.

Sample unit of competency components showing Employability Skills

The following table shows the sequence of a unit of competency, and each cell contains text taken from a range of units. It provides examples of where and how various Employability Skills could be embedded in each component.

Please note that in the example, the bracketed Employability Skills are provided for clarification only and would not be present in units of competency within this Training Package.

Unit Title	Give formal presentations and take part in meetings (Communication)
Unit Descriptor	This unit covers the skills and knowledge required to promote the use and implementation of innovative work practices to effect change. (Initiative and enterprise)
Element	Proactively resolve issues. (problem solving)
Performance Criteria	Information is organised in a format suitable for analysis and dissemination in accordance with organisational requirements. (Planning and organising)
Range Statement	Software applications may include email, internet, word

processing, spreadsheet, database or accounting packages.
(technology)

Required Skills and Knowledge Modify activities depending on differing workplace contexts, risk situations and environments. **(Learning)**
 Work collaboratively with others during a fire emergency. **(teamwork)**
 Instructions, procedures and other information relevant the maintenance of vessel and port security. **(Communication)**

Evidence Guide Evidence of having worked constructively with a wide range of community groups and stakeholders to solve problems and adapt or design new solutions to meet identified needs in crime prevention. In particular, evidence must be obtained on the ability to:

- assess response options to identified crime-prevention needs and determine the optimal action to be implemented
- in consultation with relevant others, design an initiative to address identified issues. **(Initiative and enterprise).**

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Self-management	
Learning	
Technology	Using technology

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- explicitly described within units of competency to enable Training Packages users to identify accurately the performance requirements of each unit with regards to Employability Skills.

This Training Package also seeks to ensure that Employability Skills are well-defined and written into units of competency so that they are apparent, clear and can be delivered and assessed as an essential component of unit work outcomes.

Employability Skills Summaries and Units of Competency

An Employability Skills Summary exists for each qualification. Summaries include broad advice on industry expectations with regard to Employability Skills at the qualification level. Summaries should be used by trainers and assessors to assist in identifying the Employability Skills requirements contained within units of competency.

Please refer to Volume 1 Part 1 Qualification Framework for the relevant Employability Skill Summary for qualifications in this Training Package

1.2.05 Competency Standards for the Electrotechnology Industry

2.5 Competency Standards for the Electrotechnology Industry

The first competency standards for the function of Electrotechnology were developed and endorsed in 1992, by the then National Training Board (NTB). These 1992 version competency standard units were updated into Draft Generic Electrotechnology Competency Standards prior to 1998 and provided the basis for developing the Electrotechnology Training Package which was endorsed in 1999 as UTE99. Subsequent minor amendments were made to include an array of qualifications, variations to competency standard units and the inclusion of a range of new technologies and sectors.

The revised units in this Training Package cover the broad range of knowledge and skills applied in the Electrotechnology Industry. The development project satisfied the following characteristics:

- Development, consultation, and validation included appropriate processes with a wide range of industry employer/employee, practitioners, providers, stakeholders/community, and regulatory and government agency representatives.
- The draft standards were distributed throughout the national, State and Territory ITAB network and to industry stakeholders for feedback. Feedback from other industries was also actively encouraged.

During the development process, the ElectroComms and EnergyUtilities Industry Skills Council (formerly the National Utilities and Electrotechnology ITAB), trading as EE-OZ Training Standards and its nationwide focus groups were appropriately representative of the industry, throughout Australia.

1.2.06 Competency Standard Units for the Electrotechnology Industry

2.6 Competency Standard Units for the Electrotechnology Industry

The competency standard units in this Training Package include:

National Electrotechnology Industry (UEE) units

Imported units from other endorsed Training Packages that have been valued by the National Electrotechnology Competency Advisory Council (NECAC) for inclusion in Qualifications in this Training Package.

Competency standard units provide specifications of work performance. The Australian Standard Classifications of Occupation (ASCO) defines a number of occupations served by this Training Package. See 'Preliminary Information' in this Volume. Most vocations in this group have an entry level of skill commensurate with an AQF Certificate III or higher qualification. In some instances relevant experience is required in addition to a formal qualification.

A large body of the skills and knowledge detailed in the competencies within this Training Package generally reside within the family of Electrotechnology vocations classified and grouped as occupations under ASCO (Australian Standards Classification of Occupation Code) by the Australian Bureau of Statistics (ABS). In addition to an array of units used as Possible Skills Sets, each competency standard unit is linked to one or more AQF qualifications.

Unit construction

Within the national training framework, competency standard units are the smallest component of achievement that is nationally recognised, i.e. the unit as a whole is recognised not individual elements or Performance Criteria within the unit.

The competency standard units in this Training Package have been developed in accordance with the DEEWR standardised format.

Each unit has a unique title, relates to an industry context, and conforms to national coding requirements. Issues considered in constructing competency standard units in this Training Package include breadth, size, transferability and the interrelationships between units. The relationship with any prevailing regulatory requirements and regimes is included in the unit where appropriate.

Competency standard units provide the basis for:

- recognition of skills within and across industries
- work organisation reviews and options
- development of training
- assessment
- certification
- credit transfer and articulation.

Some competency standard units have been constructed to allow reporting of additional information, generally in relation to a specific context and would be in the form of an *endorsement*.

An *Endorsement* is a statement recognising the high degree of commonality (in process or function) in Elements and Performance Criteria of the unit when applied across the industry irrespective of the required technical knowledge. *Endorsements* are a way of including information in the Evidence Guide of the unit that relates to a particular application and/or vocational outcome. This type of unit might be seen as several units in one, that is a unit with five *Endorsements* has five specific outcomes. Additional information is contained in the relevant units.

In units that include *endorsements*, all aspects of a selected *endorsement* must be completed to attain formal recognition of a specific outcome.

In cases where units contain *endorsements* they should be interpreted in the context of the qualification which requires the nomination of an *endorsement* as detailed in Volume 1 Part 1 – Qualifications Framework,.

Employability Skills

A new feature included in the competency standard units of this Training Package is the inclusion of Employability Skills, i.e. that enable employees to develop and use ‘real life’ skills and experiences in work, e.g. for self-learning, for reflecting on performance, for interpreting the workplace, in planning and organising work, and in responding to new situations that are non-routine.

Employability Skills apply to work in general as enabling skills, rather than to particular occupations or industries. They focus on the enabling qualities of knowledge and skills as they are applied in an integrated way in workplace situations.

Contextualisation

In some competency standard units ‘notes’ have been attached to specific content to add value and clarity. The notes augment one or more of the following; Scope, Performance Criteria, Range Statement, Essential Knowledge and Associated Skills or other related sections. The insertion of these ‘notes’ is primarily to provide users and support material developers with additional guidance as to the range and depth so as to achieve acceptable consistency between deliverers and assessors.

As the type, form, process, technique, technology or equipment may change over time it is the RTOs responsibility to remain current in their delivery and assessment arrangements and reference to the notes will assist in this regard.

In these instances RTOs should aim to accommodate the change by varying the context of the examples given in the ‘Notes’. However, the variation must not alter the intended outcome of the competency standard units in any way.

Where contextualisation of the notes varies the outcome of the competency standard units and its related content, RTOs should consult with EE-Oz Training Standards to explore options for incorporating and/or covering the new arrangements, so that currency of the Training Package is maintained.

It should be noted that any need to alter the competency standard units from the intended outcomes requires a new or varied competency standard unit. Such changes are to be undertaken through the continuous improvement processes required of Training Packages, which in relation to this Training Package is managed by EE-Oz Training Standards. Also refer to Volume 1 Part 1 – Qualifications Framework, of this Electrotechnology Training Package that describes vocational standards for the Industry.

Prerequisites

It is important to note that training delivery of prerequisite competency standard units may be concurrent with the delivery of the unit calling up the prerequisite. However, the final assessment event and the deeming of competence are to follow the prerequisite sequence.

Assessment guidelines

The Electrotechnology Industry has developed guidelines for the assessment of these competency standards. Assessment guidelines are included at Volume 1 Part 3 of this Training Package. Within a competency standard unit there may be advice as to additional reporting that is preferred by Industry. Where appropriate, RTOs should recognise and support this preference.

Qualifications

The Electrotechnology Industry has clearly identified qualifications which are linked to and use the competency standards. These are listed and detailed in Volume 1 Part 1 – Qualifications Framework of this Training Package. Included are details of the content and composition of the qualifications, the Industry Qualifications Framework, completion requirements, the rules for structuring, flexibility arrangements and the qualifications structure for each qualification. Further, there is a full description provided for each qualification which explains its application and gives added meaning to the group of units making up the qualification.

Exporting CSUs from this Training Package

No competency standard unit from this Training Package is to be used in isolation or exported without including all relevant interrelated components such as definitions, glossary, essential knowledge and skills, work performance requirements, matters related to language, literacy and numeracy, access, equity, cultural diversity or any regulatory arrangements that apply.

1.2.07 Maintenance of Competency Standards

2.7 Maintenance of Competency Standards

The Electrotechnology Industry competency standards were developed and are owned by the industry. However, it is acknowledged that copyright ownership with respect to this material rests with the Commonwealth.

The competency standards must be maintained so that they reflect the ongoing needs of the Electrotechnology Industry and respond in a timely manner to changed technologies and circumstances.

The parties (identified in the Preliminary Information of this Training Package) who constitute the Electrotechnology Industry of the ElectroComms and EnergyUtilities Industry Skills Council share responsibility for the maintenance of the competency standards.

- The maintenance of competency standards will be coordinated and managed by ElectroComms and EnergyUtilities Industry Skills Council Ltd trading as EE-Oz Training Standards or its successor.
- Suggestions and proposals for changes from all parties are welcomed. These should be documented and submitted to EE-Oz Training Standards in accordance with its policies and procedures.

1.2.08 Index of Competency Standard Units

2.8 Index of Competency Standard Units

The units in this Training Package have been placed in Discipline groups that would typically relate to a particular or special area of industry need and for ease in recognition of related unit groupings.

Table 1 – Index of Units and Scopes/Descriptors

A - Assembly units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEA101A	Assemble electronic components	40	2	E101A
UEENEEA102A	Select electronic components for assembly	20	2	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEA103A	Set up and check electronic component assembly machines	40	2	A101A; A102A; E101A
UEENEEA104A	Modify electronic sub assemblies	40	2	A101A; A102A; E101A; E102A and E103A or E104A
UEENEEA105A	Conduct quality and functional tests on assembled electronic apparatus	20	2	A104A; A101A; A102A; E101A; E102A; and E103A or E104A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEA106A	Use lead-free soldering techniques	40	2	E101A
UEENEEA107A	Make up wiring looms for internal wiring of appliances and machinery	40	2	E101A
UEENEEA110A	Assemble, mount and connect control gear and switchgear	40	3	G109A; E101A; E102A; E104A; E105A; E107A; G006A; G063A; G101A; G102A; G106A;
UEENEEA112A	Fabricate and assemble bus bars	40	3	E102A; E105A; E107A; E101A
UEENEEA113A	Mount and wire control panel equipment	40	3	G109A; E101A; E102A; E104A; E105A; E107A; G006A; G063A; G101A; G102A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G106A;

B - Broadcast units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED101A	Operate and maintain amateur radio communication stations	40	1	E101A

C - Commercial units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED001B	Maintain documentation	20	2	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEC002B	Source and purchase material/parts for installation or service jobs	20	3	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENECC003B	Provide quotations for installation or service jobs	20	3	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEC004B	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40	4	None
UEENEEC005B	Estimate electrotechnology projects	40	4	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEC006B	Prepare tender submissions for electrotechnology projects	60	5	C005B
UEENEEC007B	Manage contract variations	40	6	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEC008B	Receive and store materials and equipment for electrotechnology work	20	2	None
UEENEEC009B	Provide quotations for inspection and compliance audit services	80	4	None
UEENEEC010B	Deliver a service to customers	20	2	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEC012B	Direct technical and non-technical enquiries to appropriate personnel	20	2	None
UEENEEC013B	Participate in business equipment work and competency development activities	120	3	None
UEENEEC014B	Participate in computer equipment work and competency development activities	100	3	None
UEENEEC016B	Participate in voice and data communications work and competency development activities	100	3	None
UEENEEC017B	Participate in appliance servicing work and competency development activities	60	3	None
UEENEEC018B	Participate in electrical machine repair work and competency development activities	60	3	None
UEENEEC019B	Participate in switchgear and controlgear work and competency development activities	60	3	None
UEENEEC020B	Participate in electrical work and competency development activities	60	3	None
UEENEEC021B	Participate in electronics and communications work and competency development activities	60	3	None
UEENEEC022B	Participate in fire protection control work and competency development activities	60	3	None
UEENEEC023B	Participate in gaming electronic work and	60	3	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
	competency development activities			
UEENEEC024B	Participate in instrumentation and control work and competency development activities	60	3	None
UEENEEC025B	Participate in refrigeration and air conditioning work and competency development activities	60	3	None
UEENEEC026B	Participate in security equipment work and competency development activities	60	3	None
UEENEEC027B	Participate in rail communications and networks work and competency development activities	60	3	None

D - Computerised Systems units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED101A	Use computer applications relevant to a workplace	20	1	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED102A	Assemble, set-up and test computing devices	80	2	E101A
UEENEED103A	Evaluate and modify object oriented code programs	40	4	D101A; E101A
UEENEED104A	Use engineering applications software on personal computers	40	3	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED110A	Set up, create and implement content for a web server	120	5	E101A
UEENEED111A	Develop, implement and test object oriented code	140	5	D101A; E101A
UEENEED112A	Support computer hardware and software for engineering applications	120	2	D102A; E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED113A	Install and administer Unix based networked computers	80	4	E101A
UEENEED114A	Design and manage enterprise computer networks	80	6	E101A
UEENEED115A	Administer computer networks	80	4	D124A; E101A
UEENEED116A	Develop computer network services	120	4	E101A
UEENEED117A	Install and configure network systems for internetworking	120	4	E101A
UEENEED118A	Design and implement network systems for internetworking	120	6	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED119A	Design and implement advanced routing for internetworking systems	100	6	E101A
UEENEED120A	Design and implement remote access for Internetworking systems	100	6	E101A
UEENEED121A	Design and implement multi-layer switching for Internetworking systems	100	6	E101A
UEENEED122A	Design and implement security for Internetworking systems	100	6	E101A
UEENEED123A	Design and implement wireless LANs/WANs for internetworking systems	100	6	E101A
UEENEED124A	Integrate multiple computer operating systems on a client server local area network	80	4	E101A
UEENEED129A	Develop web pages for engineering applications	40	3	E101A
UEENEED130A	Select, install, configure and test multimedia components	40	3	D102A; E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED143A	Install and configure a client computer operating system and software	40	2	E101A
UEENEED144A	Commission industrial computer systems	20	5	E101A
UEENEED145A	Modify-redesign of industrial computer systems	20	5	E101A
UEENEED146A	Set up and configure basic local area network (LAN)	40	2	D102A; E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED147A	Develop energy sector directory services	80	5	E101A
UEENEED148A	Plan industrial computer systems projects	60	6	E101A
UEENEED149A	Develop energy sector computer network applications infrastructure	80	6	E101A
UEENEED150A	Develop industrial control programs for microcomputer equipped devices	60	6	E101A
UEENEED151A	Provide programming solution for computer systems engineering problems	60	6	E101A
UEENEED152A	Design embedded controller control systems	80	6	E101A
UEENEED153A	Set up, configure and test biometric devices	40	4	D146A; D102A; E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEED154A	Analyse and implement biometric measuring techniques and applications	120	5	D153A; D102A; D146A; E101A
UEENEED155A	Develop and validate biometric equipment/systems installation	120	5	D154A; D102A; D146A; D153A; E101A

E - Cross-Discipline units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE006B	Apply methods to maintain currency of industry developments	20	6	None
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20	3	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE011C	Manage risk in electrotechnology activities	60	6	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE012B	Manage electrotechnology projects	40	6	None
UEENEEE013B	Plan electrotechnology projects	60	6	None
UEENEEE015B	Develop design briefs for electrotechnology projects	40	6	None
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20	2	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE038B	Participate in development and follow a personal competency development plan	20	2	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE070B	Write specifications for computer systems engineering projects	40	5	None
UEENEEE071B	Write specifications for electrical engineering projects	40	5	None
UEENEEE072B	Write specifications for electronics and communications engineering projects	40	5	None
UEENEEE073B	Write specifications for refrigeration and air conditioning engineering projects	40	5	None
UEENEEE074B	Write specifications for renewable energy engineering projects	40	5	None
UEENEEE075B	Write specifications for industrial electronics and control projects	40	5	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE077B	Write specifications for automated systems projects	40	5	None
UEENEEE078B	Contribute to risk management in electrotechnology systems	20	6	None
UEENEEE080A	Apply industry and community standards to engineering activities	20	6	E101A
UEENEEE081A	Apply material science to solving electrotechnology engineering problems	60	6	E101A
UEENEEE082A	Apply physics to solving electrotechnology engineering problems	60	6	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE083A	Establish and follow a competency development plan in an electrotechnology engineering discipline	120	6	None
UEENEEE084A	Write specifications for electrotechnology engineering projects	40	5	None
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20	1	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40	1	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE103A	Solve problems in ELV single path circuits	40	2	E101A
UEENEEE104A	Solve problems in d.c. circuits	80	2	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE105A	Fix and secure electrotechnology equipment	20	1	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40	2	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE108A	Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits	40	2	E101A; E102; E105A; E107A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE110A	Develop and implement energy sector maintenance programs	60	5	None
UEENEEE114A	Supervise and coordinate energy sector work activities	40	4	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	20	4	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE118A	Establish, maintain and evaluate energy sector OHS systems	60	5	None
UEENEEE119A	Solve problems in multiple path extra low voltage (ELV) a.c. circuits	40	3	E101A; E104A;
UEENEEE121A	Plan an integrated cabling installation system	40	3	E108A or G106A; E101A; E102A; E105A; E107A
UEENEEE122A	Carry out preparatory energy sector work activities	60	2	E101A; E102A; E105A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE123A	Solve basic problems electronic and digital equipment and circuits	80	2	E101A; E104A;
UEENEEE124A	Compile and produce an energy sector detailed report	60	4	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE125A	Provide engineering solutions for problems in complex multiple path circuit	60	5	E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A
UEENEEE126A	Provide solutions to basic engineering computational problems	60	5	E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE127A	Use advanced computational processes to provide solutions to energy sector engineering problems	80	6	E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A
UEENEEE128A	Develop engineering solutions to photonic system problems	80	6	E125A; E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A
UEENEEE129A	Solve electrotechnical engineering problems	60	6	None
UEENEEE130A	Provide solutions and report on routine electrotechnology problems	60	2	None
UEENEEE131A	Solve problems in ELV circuits for non electrical workers	40	2	E101A
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology	20	2	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
	work			

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE141A	Use of routine equipment/plant/technologies in an energy sector environment	40	1	E101A
UEENEEE142A	Produce products for carrying out energy sector work activities	40	1	E101A; E102A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE143A	Produce routine tools/devices for carrying out energy sector work activities	40	1	E101A
UEENEEE144A	Apply technologies and concepts to energy sector work activities	40	1	None
UEENEEE145A	Apply computation when using equipment/materials/concepts in an energy sector environment	120	6	None
UEENEEE146A	Identify effects of energy on machinery and materials in an energy sector environment	120	6	None
UEENEEE147A	Identify building techniques, methods and materials used in energy sector work activities	40	2	E101A
UEENEEE148A	Carry out routine work activities in an energy sector environment	40	1	E101A
UEENEEE149A	Contribute to the operation of support plant and equipment used in electricity supply industry	40	2	E101A
UEENEEE150A	Undertake computations in an energy sector environment	120	6	None
UEENEEE151A	Transport apparatus, equipment and materials	60	2	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE152A	Observe safety practices are followed in the vicinity of isolated electrical cables	20	3	E101A
UEENEEE160A	Provide engineering solutions for uses of materials and thermodynamic effects	80	6	E101A
UEENEEE161A	Analyse static and dynamic parameters of electrical equipment	80	6	E101A
UEENEEE162A	Select drive components for electrical equipment design	80	6	E161A; E101A
UEENEEE163A	Analyse materials for suitability in electrical equipment	80	6	E161A; E101A
UEENEEE164A	Design electrical machine drives and production layout plans	80	6	E162A; E163A; E126A; E101A; E161A; E129B; or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A
UEENEEE179A	Identify and select components, accessories and materials for energy sector work activities	20	3	E101A; E148A
UEENEEE185A	Write work activity reports	20	5	None
UEENEEE190A	Prepare engineering drawings using manual drafting and CAD for electrotechnology/utilities applications	60	3	D104A; E101A; E102A; E107A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEE191A	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software	60	3	E190A; E104A; E101A; D104A; E102A; E107A
UEENEEE192A	Produce detailed electrotechnology /utilities drawings using computer aided design equipment and software	60	4	E191A; E190A; E104A; D104A; E102A; E107A

F - Data and Voice units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEF101A	Install and connect cabling for direct access to telecommunications service	20	2	F106A; E101A Or E102A; E104A; E105A; E107A; E101A
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120	2	E102A; E104A; E105A; E107A; E101A
UEENEEF103A	Install and maintain telecommunication cabling for services in lifts	20	4	G116A; G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEFF104A	Install and modify performance data communication copper cabling	40	3	F102A; E101A; E102A; E104A; E105A; E107A
UEENEFF105A	Install and modify optical fibre performance data communication cabling	40	3	F102A; E102A; E104A; E105A; E107A; E101A
UEENEFF106A	Solve problems in voice and data communications circuits	40	2	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEF107A	Set up and configure the wireless capabilities of communications and data storage devices	40	2	E101A
UEENEEF108A	Select and arrange equipment for wireless communication networks	40	3	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEF109A	Install and connect data and voice communication equipment	40	3	F104A; F105A; F102A; E102A; E104A; E105A; E107A; E101A
UEENEEF110A	Select and arrange data and voice equipment for local area networks	40	3	F104A; F105A; F102A; E102A; E104A; E105A; E107A; E101A
UEENEEF111A	Test, report and rectify faults in data and voice installations	40	3	F104A; F105A; F102A; E102A; E104A; E105A; E107A; E101A
UEENEEF112A	Install aerial telecommunication cables	40	3	F102A; E102A; E104A; E105A; E107A; E101A
UEENEEF113A	Install underground communication cables	40	3	F102A; E102A; E104A; E105A; E107A; E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEF114A	Set up and configure basic data communication systems	40	3	D102A; E101A
UEENEEF115A	Assemble and connect telecommunication frames and cabinets	60	2	E102A; E105A; E107A; E101A

G - Electrical units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG006A	Solve problems in single and three phase low voltage machines	80	3	E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG033A	Solve problems in single and three phase low voltage electrical apparatus and circuits	60	3	E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG063A	Arrange circuits, control and protection for general electrical installations	40	3	E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A;
UEENEEG076A	Install and replace low voltage current transformer metering	20	4	G105A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG101A	Solve problems in electromagnetic devices and related circuits	60	3	E104A; E101A
UEENEEG102A	Solve problems in low voltage a.c. circuits	80	3	E101A; E104A; G101A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG103A	Install low voltage wiring and accessories	20	3	E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G106A; G107A; 108A; G109A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG104A	Install appliances, switchgear and associated accessories for low voltage electrical installations	20	3	E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G106A; G107A; G108A; G109A;
UEENEEG105A	Verify compliance and functionality of low voltage general electrical installations	40	3	E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40	3	E101A; E102A; E105A; E107B

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	60	3	E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	40	3	E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG109A	Develop and connect electrical control circuits	80	3	E101A; E102A; E104A; E105A; E107A; G006A; G063A; G101A; G102A; G106A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG110A	Find and repair faults in LV d.c. electrical apparatus and circuits	60	3	G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A;
UEENEEG111A	Carry out basic repairs to electrical components and equipment	40	2	E102A; E101A
UEENEEG113A	Install and maintain emergency safety systems	60	3	E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G106A; G107A; G108A; G109A;
UEENEEG116A	Diagnose and rectify faults in traction lift systems	80	3	G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENE118A	Maintain operation of electrical mining equipment and systems	60	3	G102A; G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G106A;
UEENE119A	Maintain operation of electrical marine equipment and systems	60	3	G102A; G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G106A
UEENE120A	Select and arrange equipment for special LV electrical installations	60	3	G107A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A
UEENE121A	Verify compliance and functionality of special LV electrical installations	40	4	G105A; G120A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G107A; G108A; G109A;
UEENEEG122A	Conduct compliance inspection of single phase LV electrical installations	60	4	G105A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;
UEENEEG123A	Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase	40	4	G122A; G105A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A
UEENEEG124A	Conduct compliance inspection of special LV electrical installations	60	4	G121A; G123A; G105A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A; ; G120A; G122A
UEENEEG125A	Plan electrical installations with a low voltage demand up to 400 A per phase	40	4	G107A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG126A	Install and maintain field power and distribution systems with a low voltage demand up to 200 A per phase	40	3	G107A; G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A
UEENEEG127A	Design electrical installations with a low voltage demand greater than 400 A per phase	40	5	G125A; G107A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A
UEENEEG128A	Plan low voltage switchboard and control panel layouts	40	4	G107A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A
UEENEEG129A	Overhaul and repair major switchgear and controlgear	60	3	G164A; E102A; E105A; E107A
UEENEEG130A	Design switchboards rated for high fault levels (greater than 400 A)	60	6	G128A; G107A; E101A; E102A; E104A; E105A; E107A; G006A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G033A; G063A; G101A; G102A; G106A; G149A; E125A; E126A; E029B or G102A or H114B, E104A; or H169B;E103A G102A; E101A; E104A; G101A;
UEENEEG131A	Evaluate performance of low voltage electrical apparatus	40	5	E101A
UEENEEG132A	Carry out low voltage electrical field testing and report findings	60	4	G105A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;
UEENEEG143A	Develop engineering solution for synchronous machine and control problems	60	6	G149A; E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A
UEENEEG144A	Develop engineering solutions for d.c.	60	6	E126A; E129B; or G102A; E101;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
	machine and control problems			E104A; G101A or H114B; E101A and E104A or H169A
UEENEEG145A	Develop engineering solutions for induction machine and control problems	60	6	G149A; E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A
UEENEEG149A	Provide engineering solutions to problems in complex polyphase power circuits	60	5	E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A
UEENEEG150A	Wind electrical coils	40	2	E101A; E102A; E107A;
UEENEEG151A	Place and connect electrical coils	40	2	E104A; G150A; E101A; E102A; E107A
UEENEEG152A	Rewind single phase machines	40	3	G151A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A; G150A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG153A	Rewind three phase low voltage induction machines	60	3	G151A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A; G150A
UEENEEG154A	Rewind LV direct current machines	60	3	G151A; G101A; E101A; E102A; E104A; E107A; G150A
UEENEEG155A	Rewind HV three phase induction machines rated for voltages to 3.3 kV	60	4	G153A; E101A; E102A; E104A; E107A; G150A
UEENEEG156A	Rewind HV three phase induction machines rated for voltages above 3.3 kV	60	4	G155A; E101A; E102A; E104A; E107A; G150A; G153A
UEENEEG157A	Conduct electrical tests on LV electrical machines	40	3	G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; OR G153A; G151A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A; G150A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG158A	Conduct electrical tests on HV electrical machines	60	4	G157A; G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; OR G153A; G151A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A; G150A
UEENEEG159A	Conduct mechanical tests on electrical machines and components	40	3	G157A; G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; OR G153A; G151A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A; G150A
UEENEEG160A	Evaluate performance of LV electrical machines	40	6	G157A; G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; AND G143A; G149A; E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				OR G044B; E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A OR G145A; G149A; E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A
UEENEEG161A	Design and develop modifications to LV electrical machines	60	6	G160A; G157A; G108A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; AND G143A; G149A; E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A OR G044B; E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A OR G145A; G149A; E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				H169A
UEENEEG162A	Set up and place LV electrical apparatus and associated circuits into service	40	4	G105A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;
UEENEEG164A	Repair and maintain mechanical components of electrical machines	40	3	G111A; E102A; E105A; E107A; E101A
UEENEEG165A	Maintain and service traction lifts systems and equipment	40	3	G116A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; G108A;
UEENEEG166A	Install and maintain escalators, moving walks and treadways	40	3	G116A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; G108A;
UEENEEG167A	Align and install traction lift equipment	20	3	G116A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G101A; G102A; G106A; G108A;
UEENEEG168A	Diagnose and rectify faults in complex lift systems	40	4	G116B; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; G108A And I124A; H114A and E104A or H169A And I139A; H114A and E104A or H169A
UEENEEG169A	Manage large electrical projects	40	6	E101A
UEENEEG170A	Plan large electrical projects	60	6	E101A
UEENEEG171A	Install, set up and commission interval metering	20	3	G104A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G106A; G107A; G108A; G109A;
UEENEEG172A	Investigate and report on electrical incidents and causes	60	4	G105A; G122A; G123A E101A; E102A; E104A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;G108A; G109A;
UEENEEG175A	Develop compliance policies and plans to conduct a electrical contracting business	80	4	E101A
UEENEEG177A	Select low voltage power factor correction equipment	40	4	G105A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A; G108A; G109A;
UEENEEG179A	Develop detailed electrical drawings	60	4	E192A; D104A; E101A; E102A; E104A; E107A; E190A; E191A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG180A	Develop detailed and complex drawings for electrical systems using CAD systems	60	5	G179A; D104A; E101A; E102A; E104A; E107A; E190A; E191A; E192A
UEENEEG181A	Provide advice on effective and energy efficient lighting products	20	3	None
UEENEEG182A	Supply effective and efficient lighting products for domestic and small commercial applications	40	3	G181A
UEENEEG183A	Provide advice on the application of energy efficient lighting for ambient and aesthetic	20	3	G182A; G181A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
	effect			
UEENEEG184A	Provide photometric data for illumination system design	60	4	None
UEENEEG185A	Select effective and efficient light sources and luminaires for given locations and designs	60	4	G184A
UEENEEG186A	Design effective and efficient lighting for residential and commercial buildings	20	4	G185A; G184A
UEENEEG187A	Design effective and efficient lighting for public, open and sports areas	20	5	G185A; G184A
UEENEEG188A	Prepare quotations for the supply of effective and efficient lighting products for lighting projects	20	4	G185A; G184A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEG189A	Install and maintain emergency lighting systems	40	3	G103A; G104A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G106A; G107A; G108A; G109A;
UEENEEG197A	Apply currency of safe working practices and compliance verification of electrical installations	20	4	Unrestricted Electrician's Licence
UEENEEG198A	Apply compliance requirements to all aspects of electrical work	20	4	Unrestricted Electrician's Licence
UEENEEG199A	Conduct compliance and functional verification of electrical apparatus and existing circuits	40	3	E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G106A; G108A; G109A;

H - Electronic units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH101A	Repair basic computer equipment faults by replacement of modules/sub-assemblies	40	2	E102A; E107A and E104A; or E123A; E101

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40	2	E102A; E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH103A	Repair routine business equipment faults	120	2	E102A; E105A; E107A; E101A
UEENEEH104A	Set up and test residential video/audio equipment	40	2	E101A;
UEENEEH105A	Verify functionality and compliance of custom electronic installations	40	3	H106A; E108A; E102A; E105A; E107A; E101A
UEENEEH106A	Assemble and set up fixed video/audio components and systems in buildings and premises	120	2	E108A; E102A; E105A; E107A; E101A
UEENEEH107A	Repair predictable faults in general electronic apparatus	40	3	H112A; H113A; H138; E101A; E102A; H102A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				H111A; And H114A; E104A; H169A Or E104A; G101A; G102A;
UEENEEH108A	Assemble and install reception antennae and signal distribution equipment	60	2	E102A; E105A; E107A; E101A
UEENEEH109A	Set up and test gaming and game equipment	60	2	E101A
UEENEEH110A	Install commercial video/audio system components	120	2	E102A; E105A; E107A; E108A; E101A
UEENEEH111A	Troubleshoot single phase input d.c. power supplies	40	3	H102A; And H114A; E104A; H169A Or E104A; G101A; G102A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH112A	Troubleshoot digital sub-systems	80	3	H102A; E101A
UEENEEH113A	Troubleshoot amplifiers in an electronic apparatus	80	3	E101A; H138A; H111A; H102A; And H114A; E104A; H169A Or E104A; G101A; G102A;
UEENEEH114A	Troubleshoot resonance circuits in an electronic apparatus	80	3	E104A; OR H169A; E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH115A	Develop software solutions for microcontroller based systems	60	3	E101A
UEENEEH116A	Find and repair microwave amplifier section faults in electronic apparatus	40	3	H146A; H113A; E101A; H138A; H111A; H102A; And H114A; E104A; H169A Or E104A; G101A; G102A;
UEENEEH117A	Carry out repairs of predictable faults in video and audio replay/recording apparatus	120	3	H112A; H113A; H138; E101A; E102A; H102A; H111A; And H114A; E104A; H169A Or E104A; G101A; G102A
UEENEEH118A	Fault find and repair electronic apparatus	40	3	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH119A	Repair predictable faults in television receivers	120	3	H112A; H113A; H138; E101A; E102A; H102A; H111A; And H114A; E104A; H169A Or E104A; G101A; G102A
UEENEEH120A	Fault find and repair gaming and games equipment	80	3	H109A; H111A; H112A; H113A; H138; E101A; E102A; H102A; And H114A; E104A; H169A Or E104A; G101A; G102A
UEENEEH121A	Fault find and repair high volume office equipment	120	3	H103A; E101A; E102A; E105A; E107A;
UEENEEH122A	Fault find and repair remote control apparatus	60	3	H112A; H113A; H138; E101A; E102A; H102A; H111A; And H114A; E104A; H169A Or E104A; G101A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G102A
UEENEEH123A	Fault find and repair microwave heating apparatus	40	3	E137A; E101A
UEENEEH124A	Repair predictable faults in audio components	40	3	H112A; H113A; H138; E101A; E102A; H102A; H111A; And H114A; E104A; H169A Or E104A; G101A; G102A
UEENEEH127A	Set up and adjust commercial radio frequency (RF) transmission and reception systems	60	4	H146B; H113A; E101A; H138A; H111A; H102A; H172A And H114A; E104A; H169A Or E104A; G101A; G102A;
UEENEEH128A	Install and test microwave antennae and waveguides	60	3	E102A; E105A; E107A; E101A
UEENEEH129A	Fault find and repair navigation systems	60	4	H116B; H172B; H146A; H113A; E101A; H138A; H111A; H102A; And H114A; E104A; H169A Or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				E104A; G101A; G102A;
UEENEEH130A	Fault find and repair satellite-based surveillance and observation systems	60	4/5	H116B; H172B; H146A; H113A; E101A; H138A; H111A; H102A; And H114A; E104A; H169A Or E104A; G101A; G102A;
UEENEEH131A	Fault find and repair radar apparatus and systems	120	4/5	H116B; H172B; H146A; H113A; E101A; H138A; H111A; H102A; And H114A; E104A; H169A Or E104A; G101A; G102A;
UEENEEH132A	Fault find and repair global positioning systems	60	4/5	H116B; H172B; H146A; H113A; E101A; H138A; H111A; H102A; And H114A; E104A; H169A Or E104A; G101A; G102A;
UEENEEH133A	Fault find and repair telecommunication apparatus and systems	60	4/5	H112B; H113B; H115B; H113A; E101A; H138A; H111A; H102A; And H114A; E104A; H169A Or E104A; G101A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G102A;
UEENEEH134A	Fault find and repair electronic medical equipment	120	4/5	H112B; H113B; H115B; H113A; E101A; H138A; H111A; H102A; And H114A; E104A; H169A Or E104A; G101A; G102A;
UEENEEH135A	Design custom electronic equipment installations	120	5	H105B; H106A; E108A; E102A; E105A; E107A; E101A
UEENEEH136A	Design commercial video/audio installations	120	5	H137B; H110B; E102A; E105A; E107A; E108A
UEENEEH137A	Program and commission commercial video/audio systems	40	4	H110B; E102A; E105A; E107A; E108A
UEENEEH138A	Fault find and repair complex power supplies	40	3	H111B; E102A; E104A; E107A AND; E103A; E104A OR G101A OR E025B; G107A
UEENEEH139A	Troubleshoot basic amplifier circuits	40	3	H102B; AND H114B; OR G102A E102A; E104A; E107A AND E104A; E103A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH140A	Fault find and repair sonar apparatus and systems	120	4	H112B; H113B; H115B; H116B; H172B; E102A; H146B
UEENEEH141A	Manage computer systems/electronics projects	40	6	None
UEENEEH142A	Solve oscillator problems	40	3	H114B; H139B E102A; E104A; AND E104A; E103A
UEENEEH145A	Develop engineering solutions to analogue electronic problems	80	5/6	H139B; E102A; E104A; E107A AND E104A; E103A
UEENEEH146A	Solve fundamental electronic communications system problems	40	3	H113B
UEENEEH147A	Assess electronic apparatus compliance	60	6	None
UEENEEH148A	Design and develop advanced digital systems	40	6	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH149A	Develop engineering solutions to audio electronic problems	60	5/6	H139B; E102A; E104A; E107A AND E104A; E103A
UEENEEH150A	Assemble and set up basic security systems	80	2	E102A; E105A; E107A;
UEENEEH151A	Install large security systems	100	3	H150B; E102A; E105A; E107A
UEENEEH152A	Enter instructions and test wired and wireless security systems	40	3	H150B; E102A; E105A; E107A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH153A	Program and test large security systems	120	4/5	H154B; H155B; H156B; H152B; H150B; E102A; E105A; E107A
UEENEEH154A	Program and commission commercial security systems	60	3/4	H152B; H150B; E102A; E105A; E107A
UEENEEH155A	Program and commission commercial access control security systems	60	3/4	H152B; H150B; E102A; E105A; E107A
UEENEEH156A	Program and commission commercial security closed circuit television systems	60	3/4	H152B; H150B; E102A; E105A; E107A
UEENEEH157A	Develop basic plans for integrating security systems	40	4/5	H153B; H154B; H155B; H156B; H152B; H150B; E102A; E105A; E107A
UEENEEH158A	Design integrated security systems	40	5	H116B; H157B; H153B; H154B; H155B; H156B; H152B; H150B; H146B; H113B; E102A; E105A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				E107A
UEENEEH159A	Design integrated complex security systems for multiple sites	60	5	H117B; H158B; H112B; H113B; H116B; H157B; H153B; H154B; H155B; H156B; H152B; H150B; H146B; H113B; E102A; E105A; E107A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A; OR E025B; G107A)
UEENEEH160A	Plan large electronic projects	60	6	None
UEENEEH161A	Install fire detection and warning system apparatus	40	2	E102A; E105A; E107A
UEENEEH162A	Verify compliance and functionality of fire protection system installations	60	2	H161B; E102A; E105A; E107A
UEENEEH163A	Enter and verify programs for fire protection systems	40	3	H162B; H161B; E102A; E105A; E107A
UEENEEH164A	Commission large fire protection systems	40	3/4	H163B; H162B; H161B; E102A; E105A; E107A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH165A	Troubleshoot fire protection systems	40	3/4	H164B; H163B; H162B; H161B; E102A; E105A; E107A
UEENEEH166A	Troubleshoot microcontroller based hardware systems	40	3	None
UEENEEH167A	Commission electronics and communications systems	20	5/6	None
UEENEEH168A	Modify/redesign of electronics and communications systems	20	5/6	E101A
UEENEEH169A	Solve problems in basic electronic circuits	100		E101A
UEENEEH171A	Troubleshoot faults in television receivers	120	3/4	H119B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A)

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH172A	Troubleshoot communication systems	80	3/4	H146B
UEENEEH173A	Troubleshoot professional audio reproduction components	120	3/4	H124B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A)
UEENEEH174A	Troubleshoot audio/video recording equipment	120	3/4	H117B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A)
UEENEEH175A	Troubleshooting in security system installations	60	4	H153B; H154B; H155B; H156B; H152B; H150B; E102A; E105A; E107A
UEENEEH176A	Diagnose and rectify faults in electronic display circuits	60	4	H171B; H119B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A)
UEENEEH177A	Diagnose and rectify faults in recording and replay equipment	60	4	H174B; H117B; H112B; H113B; H138B; E102A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A)
UEENEEH178A	Diagnose and rectify faults in camera circuits and equipment	60	4	H118B
UEENEEH179A	Diagnose and rectify faults in digital television circuits and apparatus	80	4	H176B; H171B; H119B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A)
UEENEEH180A	Diagnose and rectify faults in digital transmission circuits and systems	80	4	H176B; H171B; H119B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A)
UEENEEH181A	Design electronic printed circuit boards	40	5	E101A
UEENEEH182A	Develop engineering solutions to RF amplifiers problems	40	5	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH183A	Analyse the performance of wireless-based electronic/communication systems	40	5	E101A
UEENEEH184A	Modify digital signal processing (DSP) based sub-systems	80	6	E101A
UEENEEH185A	Design signal-conditioning subsystems	80	6	E101A
UEENEEH186A	Commission satellite and microwave communication systems	40	5	H116B; H146B; H113B
UEENEEH187A	Solve problems in electronic musical equipment circuits	40	3/4	H113B
UEENEEH188A	Design and develop electronics/ computer systems projects	40	6	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEH189A	Provide Gate Array solutions for complex electronics systems	60		E101A
UEENEEH190A	Provide engineering solutions to air traffic control system problems	40	4/5	E101A
UEENEEH191A	Diagnose and rectify faults in air navigation circuits and systems	120	5	H127B; H172C; H190A; H113B; H146B
UEENEEH192A	Develop solutions for air surveillance apparatus and systems	120	5	H116B; H172C; H190A; H113B; H146B

I - Instrumentation and Control Competency Standard Units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI101A	Use instrumentation drawings, specification, standards and equipment manuals	40	3	E101A; E107A
UEENEEI102A	Solve problems in pressure measurement components and systems	40	3	I101A; E101A; E107A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI103A	Solve problems in density/level measurement components and systems	40	3	I102A; I101A; E101A; E107A
UEENEEI104A	Solve problems in flow measurement components and systems	40	3	I102A; E101A; E107A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI105A	Solve problems in temperature measurement components and systems	40	3	I101A; E101A; E107A
UEENEEI106A	Set up and adjust PID control loops	40	3	I103A; I104A; I105A; and G102A or E119A (I101B; E102A; E105A; E107A; G101A; E104A)

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI107A	Install instrumentation and control cabling and tubing	20	3	I101A; E101A; E107A
UEENEEI108A	Install instrumentation and control apparatus and associated equipment	20	3	I101A; E101A; E107A
UEENEEI110A	Set up and adjust advanced PID process control loops	40	3	I106A (I103B; I104B; I105B AND G102A OR H114B; I101B; E102A; E105A; E107A (G101A; E104A)

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI111A	Find and rectify faults in process final control elements	40	3	I107A; I108A (I101B; E102A; E105A; E107A)
UEENEEI112A	Verify compliance and functionality of instrumentation and control installations	40	3	I110A; I113A (I106B; I103B; I104B; I105B AND G102A OR H114B; I101B; E102A; E105A; E107A;G101A; E104A)

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI113A	Setup and configure Human-Machine Interface (HMI) and industrial networks	60	3	I110A (I106B; I103B; I104B; I105B AND G102A OR H114B; I101B; E102A; E105A; E107A;G101A; E104A)
UEENEEI114A	Trouble shoot process control systems	60	3	I110A (I106B; I103B; I104B; I105B AND G102A OR H114B; I101B; E102A; E105A; E107A;G101A; E104A)
UEENEEI115A	Trouble shooting in medical equipment control systems	120	3	E101A
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20	2	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI117A	Calibrate, adjust and test measuring instruments	40	3	I101A;
UEENEEI118A	Set up weighting measuring and control instruments	20	3	E104A; I101A
UEENEEI119A	Set up industrial field control devices	60	4	I124A; I139A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI120A	Provide solutions to problems in industrial control systems	60	4	I124A; I139A;
UEENEEI121A	Trouble shoot in measuring and analysis systems	40	4	I112B And I118A Or I131A Or 132A Or I133A
UEENEEI122A	Assist in commissioning process and instrumentation control systems	40	4	I112A (I106B; I103B; I104B; I105B AND G102A OR H114B; I101B; E102A; E105A; E007A; G101A; E104A)
UEENEEI123A	Design electronic control systems	60	6	I124A; I139A;
UEENEEI124A	Fault find and repair analogue circuits and components in electronic control systems	60	4	G108A or I112A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI125A	Provide solutions to fluid circuit operations	60	4	E101A; E102A; E107A
UEENEEI126A	Provide solutions to pneumatic/ hydraulic system operations	80	4	I125A (E101A; E102A; E107A)
UEENEEI127A	Analyse complex electronic circuits	80	5	I125A (E101A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
	controlling fluids			E102A; E107A)
UEENEEI128A	Set up and configure controls on complex fluid systems	80	6	I124A; I127A; I139A
UEENEEI129A	Set up electronically controlled mechanically operated complex systems	80	6	I124A; I127A; I139A
UEENEEI130A	Set up electronically controlled robotically operated complex systems	80	6	I124A; I127A; I139A;
UEENEEI131A	Set up gas analysis measuring and control instruments	20	3	E104A; I101A
UEENEEI132A	Set up water analysis measuring and control instruments	20	3	E104A; I101A
UEENEEI133A	Set up scientific analysis measuring and control instruments	20	3	E104A; I101A
UEENEEI134A	Manage instrumentation and control projects	40	6	E101A
UEENEEI135A	Plan instrumentation and control projects	60	6	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI136A	Manage automated control systems projects	40	6	E101A
UEENEEI137A	Plan automated and control systems projects	60	6	E101A
UEENEEI138A	Provide solutions to extra low voltage (ELV) electro-pneumatic control systems and drives	60	2	E101A
UEENEEI139A	Diagnose and rectify faults in digital controls systems	60	4	G102A or I112A
UEENEEI140A	Plan the electrical installation of integrated systems	20	3	E108A; E101A; E105A; E107A OR G106A; E101A; E102A; E104A; E105A; E107A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G101A;
UEENEEI141A	Develop electrical integrated systems	20	3	D001B And E108A: E101A: E105A; E107A; OR G106A E101A; E102A; E104A; E105A; E107A; G101A;
UEENEEI142A	Develop an electrical integrated system interface for access through a touch screen	20	4	I141A: D001B And E108A: E101A: E105A; E107A OR G106A; E101A; E102A; E104A; E105A; E107A; G101A;
UEENEEI143A	Develop access control of electrical integrated systems using logic-based programming tools	20	4	I142A; I141A: D001B And E108A: E101A: E105A; E107A OR G106A; E101A; E102A; E104A; E105A; E107A; G101A;
UEENEEI144A	Develop interfaces for multiple access methods to monitor, schedule and control an electrical integrated system	20	4	I142A; I141A: D001B And E108A: E101A: E105A; E107A OR G106A; E101A; E102A; E104A; E105A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				E107A; G101A;
UEENEEI145A	Diagnose and rectify faults in a.c. motor drive systems	60	5	G006A; I149A
UEENEEI146A	Diagnose and rectify faults in d.c. motor drive systems	60	5	G101A; I149A
UEENEEI147A	Diagnose and rectify faults in servo drive systems	60	5	G006A; I149A
UEENEEI148A	Solve problems in single phase electronic power control circuits	60	4	H113AA Or H144A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI149A	Solve problems in polyphase electronic power control circuits	60	4	G102A; I148A
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60	3	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI151A	Develop, enter and verify word and analogue control programs for programmable logic controllers.	60	4	I150A;
UEENEEI152A	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems	60	4	I151A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI153A	Design and configure Human-Machine Interface (HMI) networks	60	6	I151A
UEENEEI154A	Design and use advanced programming tools PC networks and HMI Interfacing	120	6	I151A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEI155A	Develop structured programs to control external devices	40	4	E101A
UEENEEI156A	Develop and test code for microcontroller devices	60	5	E101A
UEENEEI157A	Configure and maintain industrial control system networks	60	5	E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s

J - Refrigeration and Air Conditioning units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEJ040B	Manage refrigeration and air conditioning projects	40		None
UEENEEJ069B	Plan refrigeration and air conditioning projects	60		None
UEENEEJ102A	Prepare and connect refrigerant tubing and fittings	30	2	E101A;
UEENEEJ103A	Establish the basic operating conditions of vapour compression systems	60	3	E101A;

UEENEEJ104A	Establish the basic operating conditions of air conditioning systems	20	3	E101A;
UEENEEJ105A	Position, assemble and start up single head split air conditioning and water heating heat pump systems	70	2	E101A; J102A; J172A
UEENEEJ106A	Install refrigerant pipe work, flow controls and accessories	60	3	E101A; E102A; E105A; E137A; J102A; J103A;
UEENEEJ107A	Install air conditioning and refrigeration systems, major components and associated equipment	80	3	E101A; E102A; E137A; J106A; J108A; J170A; E105A; E107A; J102A; J103A; J194A; J153A;
UEENEEJ108A	Recover, pressure test, evacuate, charge and leak test refrigerants	60	3	E101A; J102A; J103A
UEENEEJ109A	Verify functionality and compliance of refrigeration and air conditioning installations	20	3	E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A;

				J113A; J153A; J170A; J194A; P012A; P017A; P024A; P025A;
UEENEEJ110A	Select refrigerant piping, accessories and associated controls	50	3	E101A; J103A
UEENEEJ111A	Diagnose and rectify faults in air conditioning and refrigeration systems and components	40	3	J107A; P017A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J170A; P012A
UEENEEJ112A	Diagnose and rectify faults in complex air conditioning/ refrigeration units	100	4	J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ113A	Commission air conditioning and refrigeration systems	40	3	J107A; P017A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J170A; P012A; P017A;
UEENEEJ114A	Resolve problems in hydronic systems	40	3	J111A; J113A; E101A; E102A; E103A; E105A;

				E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ115A	Resolve problems in beverage dispensers	40	3	J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ116A	Resolve problems in transport refrigeration systems	20	3	J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ117A	Resolve problems in ultra-low temperature refrigeration systems	20	3	J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ118A	Resolve problems in post mix refrigeration systems	20	3	J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A;

				J110A; J153A; J170A; P012A; P017A;
UEENEEJ119A	Resolve problems in ice making systems	20	3	J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ120A	Resolve problems in industrial refrigeration systems	20	3	E101A; E102A; E105A; J102A; J103A; J104A; J106A; ; J107A; J108A ; J111A; J113A; J153A; J170A; P013A; P016A
UEENEEJ121A	Monitor and adjust refrigeration energy management systems	40	4	J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ122A	Diagnose faults in complex HVAC /refrigeration control systems	80	4	J112A; J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A;

				P017A; P024A; P025A
UEENEEJ123A	Commission complex (HVAC) heating, ventilation and air conditioning systems	80	4	J112A; J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ124A	Commission refrigeration/air conditioning hydronic systems	80	4	J112A; J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ125A	Commission complex refrigeration systems and equipment	80	4	J112A; J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ126A	Commission complex refrigeration/air conditioning control systems	80	4	J112A; J122A; J109A; E101A; E102A; E103A;

				E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ127A	Establish the thermodynamic parameters of refrigeration and air conditioning system	80	4	J192A J193A OR J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ128A	Produce HVAC/R system design drawings	80	4	J164A; J192A; J193A OR J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ129A	Establish heat loads for commercial refrigeration and air conditioning	80	4	J127A; J192A; and J193A or

	applications			J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ130A	Produce HVAC/R control system diagrams	40	4	J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ131A	Determine noise and vibration encountered in HVAC/R applications	40	4	J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ132A	Design commercial refrigeration systems and select components	80	5	J129A; J165A; J127A; J164A; J192A; and J193A

				or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ133A	Design industrial refrigeration systems and select components	80	5	J132A; J165A; J127A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A;
UEENEEJ134A	Design heating, ventilation and air conditioning (HVAC) systems and select components	60	5	J129A; J165A; J127A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ135A	Design control systems for refrigeration or	80	5	J130A;

	heating, ventilation and air conditioning systems			J164A;J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ136A	Evaluate and report on building services energy management systems	80	5	J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ137A	Evaluate and report on the indoor air quality of buildings	40	5	J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ138A	Analyse vibration and noise in refrigeration and air conditioning systems	80	6	J165A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A;

				J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ139A	Develop specifications and prepare drawings for HVAC/Refrigeration projects	60	6	J128A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ141A	Design complex commercial refrigeration systems and select equipment	40	6	J132A; J138A; J127A; J129A; J165A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ142A	Design complex industrial refrigeration systems and select equipment	40	6	J133A; J138A; J127A; J129A; J132A; J165A; J164A; J192A; and J193A or J109A; E101A; E102A;

				E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ143A	Design complex air conditioning systems and select equipment	120	6	J134A; J138A; J165A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ144A	Design mechanical ventilation/exhaust systems and select equipment	40	6	J134A; J138A; J165A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ145A	Design hydronic systems and select equipment	80	6	J138A; J165A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A;

				E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ146A	Design complex control systems for refrigeration, heating, ventilation or air conditioning	80	6	J135A; J130A;J164A;J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ147A	Audit energy use for commercial HVAC/Refrigeration systems	40	6	J136A; J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ148A	Audit HVAC/R control systems for compliance with regulations and standards	60	6	J135A; J130A; J164A;J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A;

				J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ149A	Develop heat exchanger design specifications	80	6	J138A; J165A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ150A	Evaluate new and alternative technologies applicable to electrotechnology applications	40	6	None
UEENEEJ151A	Service small electrical appliances and power tools	60	3	G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A; or P024A and J153A; E107A; J108A; J194A; E101A; E103A;
UEENEEJ153A	Find and rectify fault motors and associated controls in refrigeration and air conditioning	50	3	E107A; J108A; J194A; E101A; E103A;

UEENEEJ154A	Find and rectify faults in appliance control systems and devices	60	3	G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A; or J153A; E107A; J108A; J194A; E101A; E103A;
UEENEEJ155A	Service refrigeration appliances	60	3	J054B; J062B J102A; J195A and G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A; or J153A; E107A; J108A ; J194A; E101A; E103A;
UEENEEJ156A	Service clothes washing machines and dryers	40	3	J154A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A; or J153A;E107A; J108A ; J194A; E101A; E103A;
UEENEEJ157A	Service electrical heating appliances	60	3	J154A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A; or J153A;E107A; J108A ; J194A; E101A; E103A;
UEENEEJ158A	Service dishwasher machines	40	3	J154A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A;

				or J153A;E107A; J108A ; J194A; E101A; E103A;
UEENEEJ159A	Service gas heating appliances	40	3	J154A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A; or J153A;E107A; J108A; J194A; E101A; E103A;
UEENEEJ161A	Verify functionality and compliance of appliances	20	3	E101A; E102A; E103A; E105A; E107A; E137A; J102A; J153A; J154A; J155A; J156A; J162A; J194A; J195A; K142A; P012A; P017A; P024A; P025A; Plus elective units from Schedule 3 to a weighing of 220 points.
UEENEEJ162A	Recover, pressure test, evacuate, charge and leak test refrigerants — appliances	50	3	J102A; J195A E101A;
UEENEEJ164A	Analyse the operation of HVAC air and hydronic systems	80	4	J192A: J193A: or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A

UEENEEJ165A	Evaluate thermodynamic and fluid parameters of refrigeration systems	100	5	J127A; J164A; J192A; and J193A Or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ166A	Resolve problems in dairy refrigeration systems	20	3	J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ167A	Resolve problems in central plant air conditioning systems	40	3	J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ168A	Maintain microbial control of refrigeration and air conditioning systems	20	3	None
UEENEEJ170A	Diagnose and rectify faults in air conditioning and refrigeration control systems	70	3	J153A; E107A; J108A; J194A; E101A;

				E103A;
UEENEEJ171A	Resolve problems in refrigerated beverage vending cabinets	20	3	J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ172A	Recover, pressure test, evacuate, charge and leak test refrigerants — split systems	60	2	J102A; E101A;
UEENEEJ173A	Service and repair microwave ovens	40	3	J154A: G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A; or J153A; E107A; J108A; J194A; E101A; E103A;
UEENEEJ174A	Apply safety awareness and legal requirements for hydrocarbon refrigerants	10	3	None
UEENEEJ175A	Service and repair self contained hydrocarbon air conditioning and refrigeration systems	20	3	J174A; and J155A; J054B; J062B;J102A; J195A and G006A; E101A; E102A;

				E104A; E105A; E107A; G101A; G106A; or J153A; E107A; J108A; J194A; E101A; E103A; Or J111A; J107A; P017A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J170A; P012A
UEENEEJ176A	Install and commission hydrocarbon refrigerant systems, components and associated equipment	20	3	J113A; J174A; J075A ; J107A; P017A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J170A; P012A; P017A;
UEENEEJ177A	Design hydrocarbon refrigerant systems	40	5	J132A; J174A; J129A; J165A; J127A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A;
UEENEEJ178A	Apply safety awareness and legal requirements for ammonia refrigerant	10	3	None

UEENEEJ179A	Repair and service ammonia refrigeration systems	20	3	J178A; J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ180A	Install and commission ammonia refrigeration systems, components and associated equipment	20	3	J178A; J179A; J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ181A	Design ammonia refrigerated systems	40	5	J132A; J178A; J129A; J165A; J127A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ182A	Repair and service secondary refrigeration systems	20	3	J111A; J113A; E101A; E102A; E103A; E105A;

				E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ183A	Design secondary refrigerant systems	40	5	J132A; J129A; J165A; J127A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ184A	Apply safety awareness and legal requirements for carbon dioxide refrigerant	10	3	None
UEENEEJ185A	Repair and service carbon dioxide refrigeration systems	20	3	J111A; J113A; J184A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ186A	Install and commission carbon dioxide	20	3	J184A; J185A

	refrigeration systems, components and associated equipment			J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A;
UEENEEJ187A	Design carbon dioxide refrigerated systems	40	5	J132A; J184A; J129A; J165A; J127A; J164A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ188A	Repair and service self contained carbon dioxide refrigeration and heat pump systems	20	3	J184A and J155A J054B; J062B; J102A; J195A; and G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A; or J153A; E107A; J108A ; J194A; E101A; E103A; or J111A; J107A; P017A; E101A; E102A; E103A; E105A;

				E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J170A; P012A
UEENEEJ189A	Service room air conditioners	30	3	J104A; E010A and J154A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A; or J153A; E107A; J108A ; J194A; E101A; E103A; or J170A; J153A; E107A; J108A ; J194A; E101A; E103A; and J162A; J102A; J195A ; E101A; or J108A E101A; J102A; J103A
UEENEEJ190A	Select basic commercial refrigeration system equipment, components and accessories	40	4	J110A; E101A; J103A J129A; J127A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A

UEENEEJ191A	Select residential air conditioning system equipment, components, and accessories	40	4	J110A; E101A; J103A J129A; J127A; J192A; and J193A or J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A
UEENEEJ192A	Analyse the psychrometric performance of HVAC/R systems	50	4	J193A or J109A E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A; and elective units from Schedule 3 to a weighting of 30 points
UEENEEJ193A	Analyse the thermodynamic performance of HVAC/R systems	40	4	None
UEENEEJ194A	Solve problems in low voltage refrigeration circuits	40	3	E103A and J103A or J195A E101A;

UEENEEJ195A	Establish the basic operating conditions of vapour compression systems - appliances	50	3	E101A
UEENEEJ196A	Operate Ammonia Refrigeration Plan	40	3	J178A

K - Renewable/Sustainable Energy units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEK101A	Maintain safety and tidiness of remote area power supply systems	20	2	K102A; E101A
UEENEEK102A	Work safely with remote area power supply systems	20	2	E101A
UEENEEK103A	Conduct periodic maintenance of remote area power supply battery banks	40	2	E101A; E102A; E103A; K101A; K102A; E107A; And E131A Or E104A
UEENEEK104A	Conduct periodic maintenance of remote area power supply generator sets	40	2	E101A; E102A; E103A; K101A; K102A; E107A; And E131A Or E104A
UEENEEK105A	Conduct periodic maintenance of remote area power supply photo voltaic arrays	40	2	E101A; E102A; E103A; K101A; K102A; E107A; And E131A Or E104A
UEENEEK106A	Conduct periodic maintenance of remote area power supply wind generators	40	2	E101A; E102A; E103A; K101A; K102A; E107A; And E131A Or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				E104A
UEENEEK107A	Conduct checks in the demand side use of remote area power supplies (RAPS)	40	3	E101A; K102A; K103A; K104A; K105A; K106B; E101A; E102A; E103A; K101A
UEENEEK108A	Plan periodic maintenance schedules of remote area power supplies (RAPS)	40	3	E101A; E137A; K102A; K103A; K104A; E101A; E102A; E103A; K101A
UEENEEK109A	Attend to breakdowns in remote area power supplies (RAPS)	20	3	E101A; E102A; E103A; K101A;
UEENEEK110A	Co-ordinate maintenance of renewable energy (RE) apparatus and systems	20	4	E101A; E102A; E103A; K101A;
UEENEEK111A	Assemble and connect remote area power supplies	60	2	E101A; E102A; E107A; E108A And E131A Or E104A
UEENEEK112A	Provide basic sustainable energy solutions for energy reduction in residential premises	40	2	None
UEENEEK114A	Promote sustainable energy practices in the community	40	2	None
UEENEEK116A	Maintain and repair remote area power generation facilities	120	2	K104A E101A; E102A; E103A; E107A; K101A; K102A
UEENEEK117A	Maintain and repair facilities associated with remote area essential service operations	120	2	E101A; E102A; E103A; And E131A Or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				E104A
UEENEEK118A	Maintain and monitor remote area essential service (RAPS) operations	120	2	E101A K102A
UEENEEK120A	Maintain operation of remote area power generation plant	120	2	K116A;
UEENEEK121A	Manage renewable energy (RE) projects	40	6	None
UEENEEK122A	Plan renewable energy (RE) projects	60	6	None
UEENEEK123A	Carry out basic repairs to renewable energy apparatus	80	2	E104A; E108A; E101A; E102A; E107A;
UEENEEK124A	Solve basic problems in micro hydro systems	20	3	G101A
UEENEEK125A	Solve basic problems in photovoltaic energy apparatus and systems	20	3	E104A; E137A; And E108A Or G106A
UEENEEK127A	Diagnose and rectify faults in renewable energy control systems	60	3	K125A
UEENEEK128A	Solve problems in stand-alone renewable energy systems	60	3	K123A; E104A; E108A; E102A; E103A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				E105A; E107A
UEENEEK129A	Design renewable energy (RE) heating systems	120	5	K128A;
UEENEEK130A	Solve problems in wind energy conversion systems rated up to 10 kW	60	3	G101A
UEENEEK131A	Design wind energy conversion systems (WECS) rated to 10 kW	60	5	K130A; E104A; E108A; E102A; E103A; E105A; E107A
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20	5	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEK133A	Design hybrid renewable power systems	80	6	K128B; K123B; E104A; E108A; E102A; E103A; E105A; E107A
UEENEEK134A	Install ELV stand-alone photovoltaic power systems	60	3	K125A; E104A; E108A; E102A; E103A; E105A; E107A
UEENEEK135A	Design grid connected photovoltaic power supply systems	60	4	K125A; E104A; E108A; E102A; E103A; E105A; E107A
UEENEEK136A	Install, configure and commission LV micro-hydro systems rated up to 6.4 kW	20	3	G103A; K124A
UEENEEK137A	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW	20	3	K124A; E104A; E108A; E102A; E103A; E105A; E107A
UEENEEK138A	Design micro-hydro systems rated to 6.4 kW	60	5	K124A; E104A; E108A; E102A; E103A; E105A; E107A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEK139A	Design stand-alone renewable energy (RE) systems	40	6	K128A; K123A; E104A; E108A; E102A; E103A; E105A; E107A
UEENEEK140A	Develop engineering solutions to renewable energy (RE) problems	60	6	K131B; K132B; K135B; K138B; K139B; K130B; K125B; K123B; E104A; E108A; E102A; E103A; E105A; E107A
UEENEEK142A	Apply environmentally and sustainable energy procedures in the energy sector	20	2	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEK143A	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications	20	3	K130A
UEENEEK144A	Install, configure and commission LV wind energy conversion systems rated up to 10 kW	40	3	G103A; K130A
UEENEEK145A	Implement and monitor energy sector environmental and sustainable energy policies and procedures	20	4	None

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEK146A	Design energy management controls for electrical installations in buildings	80	6	K132A
UEENEEK148A	Install, configure and commission LV grid connected photovoltaic power systems	40	3	G103A; K125A;
UEENEEK149A	Verify compliance and functionality of a extra low voltage renewable energy installation	40	3	E101A; E102A; E103A; E104A; E105A; E107A; E108A; E119A; E137A; G101A; K123A; K127A; K128A; K134A
UEENEEK151A	Develop effective engineering strategies for energy reduction in buildings	60	6	K132A
UEENEEK152A	Develop strategies to address sustainability issues for electrical installations	20	4	G105A
UEENEEK153A	Assess energy loads and uses for energy efficiency in residential, office and retail premises	40	4	K152A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEK154A	Assess energy loads and uses for energy efficiency in commercial facilities	40	4	K153A
UEENEEK155A	Assess energy loads and uses for energy efficiency in industrial properties and enterprises	40	4	K153A

M - Hazardous units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEM019A	Attend to breakdowns in hazardous areas — coal mining	20	3	M080A and competencies in attending to breakdowns in general electrical or instrumentation equipment mechanical plant/equipment service and maintenance at least at AQF level 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEI112B; MEM7.1B Competency required by a given industry or enterprise for plant

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM020A	Attend to breakdowns in hazardous areas — gas atmospheres	20	3	M080A and competencies in attending to breakdowns in general electrical or instrumentation equipment mechanical plant/equipment service and maintenance at least at AQF level 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM112B; MEM7.1B Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				MEM7.1B; PMAOPS201B
UEENEEM021A	Attend to breakdowns in hazardous areas — dust atmospheres	20	3	M080A and competencies in attending to breakdowns in general electrical or instrumentation equipment mechanical plant/equipment service and maintenance at least at AQF level 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEI112B; MEM7.1B Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM022A	Attend to breakdowns in hazardous areas — pressurisation	20	3	M080A and competencies in attending to breakdowns in general electrical or instrumentation equipment

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				mechanical plant/equipment service and maintenance at least at AQF level 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEI112B; MEM7.1B Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM023A	Install explosion-protected equipment and wiring systems — coal mining	60	3	M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM024A	Install explosion-protected equipment and wiring systems — gas atmospheres	60	3	M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM025A	Install explosion-protected equipment and wiring systems — dust atmospheres	60	3	M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM150B; UEENEEM112B; UEENEEM004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM026A	Install explosion-protected equipment and wiring systems — pressurisation	60	3	M080A and competencies in

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM027A	Maintain equipment in hazardous areas — coal mining	60	3	M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent.

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				<p>Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF011B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B</p>
UEENEEM028A	Maintain equipment in hazardous areas — gas atmospheres	60	3	<p>M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF011B; Competency required by a given industry or enterprise for plant</p>

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM029A	Maintain equipment in hazardous areas — dust atmospheres	60	3	M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM150B; UEENEEM112B; UEENEEM011B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				MEM7.1B; PMAOPS201B
UEENEEM030A	Maintain equipment in hazardous areas — pressurisation	60	3	M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEM011B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM031A	Overhaul and repair of explosion-protected equipment — coal mining	60	3	Competencies in overhaul and repair of general low-voltage or extra-low voltage electrical/electronic equipment at

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				AQF level 3 or equivalent Example are (but not limited to): UEENEEG060B; MEM15.20C
UEENEEM032A	Overhaul and repair of explosion-protected equipment — flameproof enclosures	60	3	Competencies in overhaul and repair of general low-voltage or extra-low voltage electrical/electronic equipment at AQF level 3 or equivalent. Example are (but not limited to): UEENEEG060B; MEM15.20C
UEENEEM033A	Overhaul and repair of explosion-protected equipment — gas atmospheres	60	3	Competencies in overhaul and repair of general low-voltage or extra-low voltage electrical/electronic equipment at AQF level 3 or equivalent. Example are (but not limited to): UEENEEG060B; MEM15.20C
UEENEEM034A	Overhaul and repair of explosion-protected equipment — dust atmospheres	40	3	Competencies in overhaul and repair of general low-voltage or extra-low voltage electrical/electronic equipment at AQF level 3 or equivalent. Example are (but

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				not limited to): UEENEEG060B; MEM15.20C
UEENEEM035A	Conduct a conformity assessment of explosion-protected equipment — coal mining	40	5	Competencies in compliance assessment of electrical / electronic equipment and general technical evaluation and report writing at AQF 5 or equivalent. Example are (but not limited to): C004B; E015B; E016B; E024B.
UEENEEM036A	Conduct a conformity assessment of explosion-protected equipment — gas atmospheres	40	5	Competencies in compliance assessment of electrical / electronic equipment and general technical evaluation and report writing at AQF 5 or equivalent. Example are (but not limited to): C004B; E015B; E016B; E024B.
UEENEEM037A	Conduct a conformity assessment of explosion-protected equipment — dust atmospheres	40	5	Competencies in compliance assessment of electrical / electronic equipment and general technical evaluation and report writing at

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				AQF 5 or equivalent. Example are (but not limited to): C004B; E015B; E016B; E024B.
UEENEEM038A	Conduct testing of hazardous areas installations — coal mining	40	4	M080A and competencies in conducting testing of general electrical, electronic, instrumentation and/or data communication installations has been achieved at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM162B; UEENEEM112B; UEENEEM011B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM039A	Conduct testing of hazardous areas installations — gas atmospheres	40	4	M080A and competencies in

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				conducting testing of general electrical, electronic, instrumentation and/or data communication installations has been achieved at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH162B; UEENEEI112B; UEENEEF011B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM040A	Conduct testing of hazardous areas installations — dust atmospheres	40	4	M080A and competencies in conducting testing of general electrical, electronic, instrumentation and/or data communication installations has been achieved at

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH162B; UEENEEI112B; UEENEEF011B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM041A	Conduct testing of hazardous area installations — pressurisation	40	4	M080A and competencies in conducting testing of general electrical, electronic, instrumentation and/or data communication installations has been achieved at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEI112B; MEM7.1B Competency required by a given

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM042A	Conduct visual inspection of hazardous areas installations	40	4	M080A and competencies in conducting testing of general electrical, electronic, instrumentation and/or data communication installations has been achieved at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH162B; UEENEI112B; UEENEFF011B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent.

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM043A	Conduct detailed inspection of hazardous areas installations — coal mining	40	4	<p>M023A; or M027A; or (M080A and M054A) or (M080A and G023B)</p> <p>M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B;</p>

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				MEM7.1B; PMAOPS201B Or M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; Or G022B; G105A; E101A; E102A; E103A; E104A; E105A; E107A; E108A; E033B; G101A; G102A; G103A; G104A; G107A; G108A; G109A; and elective units as required from a Schedule 3 to a Strand Unit value of 6
UEENEEM044A	Conduct detailed inspection of hazardous areas installations — gas atmospheres	40	4	M024A; or M028A; or (M080A and M054A) or (M080A and G023B) M080A and competencies in installation of general low- voltage or extra- low voltage electrical /electronic equipment and wiring systems at

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				<p>AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B Or M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; Or G022B; G105A; E101A; E102A; E103A; E104A; E105A; E107A; E108A; E033B; G101A; G102A; G103A; G104A; G107A; G108A; G109A;</p>

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				and elective units as required from a Schedule 3 to a Strand Unit value of 6
UEENEEM045A	Conduct detailed inspection of hazardous areas installations — dust atmospheres	40	4	<p>M025A; or M029A; or (M080A and M054A) or (M080A and G023B) M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM150B; UEENEEM112B; UEENEEM004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B;</p>

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				PMAOPS201B Or M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; Or G022B; G105A; E101A; E102A; E103A; E104A; E105A; E107A; E108A; E033B; G101A; G102A; G103A; G104A; G107A; G108A; G109A; and elective units as required from a Schedule 3 to a Strand Unit value of 6
UEENEEM046A	Conduct detailed inspection of hazardous areas installations — pressurisation	40	4	M026A; or M030A; or (M080A and M054A) or (M080A and G023B) M080Aand competencies in installation of general low- voltage or extra- low voltage electrical /electronic equipment and wiring systems at AQF 3 or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B Or M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; Or G022B; G105A; E101A; E102A; E103A; E104A; E105A; E107A; E108A; E033B; G101A; G102A; G103A; G104A; G107A; G108A; G109A; and elective units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				as required from a Schedule 3 to a Strand Unit value of 6
UEENEEM047A	Develop and manage maintenance programs for hazardous areas electrical equipment — coal mining	20	4	<p>M027A; or (M075A; and E010B) M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM150B; UEENEEM112B; UEENEEM004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B Or Competency in designing</p>

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				electrical systems and installations at AQF level 6 or equivalent. Examples are (but not limited to): E015B or G030B or I123B
UEENEEM048A	Develop and manage maintenance programs for hazardous areas electrical equipment — gas atmospheres	20	4	M028A; or (M080A; and E010B) M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM150B; UEENEEM112B; UEENEEM004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				PMAOPS201B
UEENEEM049A	Develop and manage maintenance programs for hazardous areas electrical equipment — dust atmospheres	20	4	M029A; or (M080A; and E010B) M080Aand competencies in installation of general low- voltage or extra- low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM150B; UEENEEM112B; UEENEEM004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM050A	Develop and manage maintenance programs for hazardous areas electrical equipment — pressurisation	20	4	M030A; or (M080A; and E010B) M080Aand

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				<p>competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B</p>
UEENEEM052A	Classify hazardous areas — gas atmospheres	40	6	<p>Competencies in gathering and analysing technical data at AQF6 or equivalent Examples are (but not limited to): E071B; E075B; R002B</p>
UEENEEM053A	Classify hazardous areas — dust atmospheres	40	6	Competencies in

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				gathering and analysing technical data at AQF6 or equivalent Examples are (but not limited to): E071B; E075B; R002B
UEENEEM054A	Plan electrical installations for hazardous areas — gas atmospheres	20	4	M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM055A	Plan electrical installations for hazardous areas — dust atmospheres	20	4	M025A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM150B; UEENEEM112B; UEENEEM004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM056A	Plan electrical installations for hazardous areas — pressurisation	20	4	M026A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM150B; UEENEEM112B; UEENEEM004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM057A	Design explosion-protected electrical systems and installations — gas atmospheres	20	6	Competencies in designing electrical systems and installations at AQF level 6 or equivalent. Examples are (but not limited to): E015B; G030B; I123B
UEENEEM058A	Design explosion-protected electrical systems and installations — dust atmospheres	20	6	Competencies in designing electrical systems and installations at AQF level 6 or equivalent. Examples are (but not limited to): E015B; G030B; I123B
UEENEEM059A	Design explosion-protected electrical systems and installations — pressurisation	20	6	Competencies in designing electrical systems and installations at AQF level 6 or equivalent. Examples are (but not limited to): E015B; G030B; I123B
UEENEEM060A	Carry out overhaul and repair of explosion-protected equipment — coal mining	60	3	Competency in general electrical, electronic, and/or mechanical

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				equipment repair job function at AQF 3 or higher. Examples are (but not limited to): G029B; G064B; MEM7.1B
UEENEEM061A	Carry out overhaul and repair of explosion-protected equipment — flameproof enclosures	60	3	Competency in general electrical, electronic, and/or mechanical equipment repair job function at AQF 3 or higher. Examples are (but not limited to): G029B; G064B; MEM7.1B
UEENEEM062A	Carry out overhaul and repair of explosion-protected equipment — gas atmospheres	60	3	Competency in general electrical, electronic, and/or mechanical equipment repair job function at AQF 3 or higher. Examples are (but not limited to): G029B; G064B; MEM7.1B
UEENEEM063A	Carry out overhaul and repair of explosion-protected equipment — dust atmospheres	60	3	Competency in general electrical, electronic, and/or mechanical equipment repair job function at AQF 3 or higher. Examples are (but not limited to): G029B; G064B; MEM7.1B
UEENEEM064A	Conduct audit of hazardous areas	60	5	Competency in engineering

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
	installations — coal mining			auditing/evaluation AQF 5 or equivalent. Examples are (but not limited to): G031B; G060B;
UEENEEM065A	Conduct audit of hazardous areas installations — gas atmospheres	60	5	Competency in engineering auditing/evaluation AQF 5 or equivalent. Examples are (but not limited to): G031B; G060B;
UEENEEM066A	Conduct audit of hazardous areas installations — dust atmospheres	60	5	Competency in engineering auditing/evaluation AQF 5 or equivalent. Examples are (but not limited to): G031B; G060B;
UEENEEM067A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — coal mining	60	5	M035A; M043A; M064A Competencies in compliance assessment of electrical / electronic equipment and general technical evaluation and report writing at AQF 5 or equivalent. Example are (but not limited to): C004B; E015B; E016B; E024B. And M080Aand competencies in

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B Or M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; Or G022B;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G105A; E101A; E102A; E103A; E104A; E105A; E107A; E108A; E033B; G101A; G102A; G103A; G104A; G107A; G108A; G109A; and elective units as required from a Schedule 3 to a Strand Unit value of 6 And Competency in engineering auditing/evaluation AQF 5 or equivalent. Examples are (but not limited to): G031B; G060B;
UEENEEM068A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — gas atmospheres	60	5	M036A; M044A; M065A Competencies in compliance assessment of electrical / electronic equipment and general technical evaluation and report writing at AQF 5 or equivalent. Example are (but not limited to): C004B; E015B; E016B; E024B. And M080A and competencies in installation of general low-

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				<p>voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B Or M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; Or G022B; G105A; E101A; E102A; E103A;</p>

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				E104A; E105A; E107A; E108A; E033B; G101A; G102A; G103A; G104A; G107A; G108A; G109A; and elective units as required from a Schedule 3 to a Strand Unit value of 6 And Competency in engineering auditing/evaluation AQF 5 or equivalent. Examples are (but not limited to): G031B; G060B;
UEENEEM069A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — dust atmospheres	60	5	M037A; M045A; M066A; Competencies in compliance assessment of electrical / electronic equipment and general technical evaluation and report writing at AQF 5 or equivalent. Example are (but not limited to): C004B; E015B; E016B; E024B. And M080A and competencies in installation of general low-voltage or extra-low voltage

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B Or M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to): G025B; I112B; Or G022B; G105A; E101A; E102A; E103A; E104A; E105A; E107A; E108A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				E033B; G101A; G102A; G103A; G104A; G107A; G108A; G109A; and elective units as required from a Schedule 3 to a Strand Unit value of 6 And Competency in engineering auditing/evaluation AQF 5 or equivalent. Examples are (but not limited to): G031B; G060B;
UEENEEM070A	Repair reeling, trailing and flexible cables	60	2	None
UEENEEM071A	Test reeling, trailing and flexible cables	60	2	None
UEENEEM072A	Inspect and fit plugs/couplers for reeling, trailing and flexible cables	60	2	None
UEENEEM073A	Verify compliance of repaired reeling, trailing and flexible cables	60	3	M070A; M071A; M072A
UEENEEM074A	Plan electrical installations in hazardous areas — Coal mining	20	4	M023A Competencies in planning general electrical/instrumentation installations at AQF4 or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				equivalent. Examples are (but not limited to): G025B or I112B M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEG105A; UEENEEH150B; UEENEEI112B; UEENEEF004B; Competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM075A	Design explosion-protected electrical systems — Coal mining	20	6	Competency in designing electrical systems and installations at AQF level 6 or equivalent.

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				Examples are (but not limited to): E015B or G030B or I123B
UEENEEM076A	Use and maintain the integrity of a portable gas detection device	20	3	UEENEEM080A and Competencies required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent
UEENEEM077A	Install and maintain the integrity of fixed gas detection equipment	20	3	M023A or M024A or M025A or M027A or M028A or M029A or M080A and competencies in installation of general low-voltage or extra-low voltage electrical /electronic equipment and wiring systems at AQF 3 or equivalent. Examples are (but not limited to): UEENEEM105A; UEENEEM150B; UEENEEM112B; UEENEEM004B; Competency required by a given industry or

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B
UEENEEM078A	Manage compliance of hazardous areas	20	4	Competency in general plant management at AQF level 4 Example is (but not limited to) PMASUP410A
UEENEEM079A	Design of gas detection systems and installations	20	6	M057A or M0058A or M059A Competencies in designing electrical systems and installations at AQF level 6 or equivalent. Examples are (but not limited to): E015B; G030B; I123B
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20	2	Competency required by a given industry or enterprise for plant or machinery

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to) G105A; I112B; MEM7.1B; PMAOPS201B

N - Rail units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEN101A	Maintain mechanical rail signalling equipment and infrastructure	20	4	E101A Other Units? and work place requirements in 'Work site protection' have been acquired.
UEENEEN102A	Assemble and wire internal electrical rail signalling equipment	30	3	G104A; and work place requirements in 'Work site protection' have been acquired. E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G106A; G107A; G108A; G109A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEN103A	Install and maintain rail track circuit leads and bonds	30	3	N102A; and work place requirements in 'Work site protection' have been acquired. E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;
UEENEEN104A	Test copper rail signalling cables	20	3	E101A Other Units e.g. N121A? and work place requirements in 'Work site protection' have been acquired.
UEENEEN105A	Install and maintain rail signalling power supplies	40	4	N102A; and work place requirements in 'Work site protection' have been acquired. E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;
UEENEEN106A	Install and maintain non-vital screen based control systems	20	4	E101A and work place requirements in 'Work site protection' have been acquired.

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEN107A	Install and maintain active level crossing equipment	40	4	N109A and work place requirements in 'Work site protection' have been acquired. N103A; N105A; N102A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;
UEENEEN108A	Install and maintain power operated point actuating devices	40	4	N109A and work place requirements in 'Work site protection' have been acquired. N103A; N105A; N102A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;
UEENEEN109A	Install and maintain train detection equipment	40	4	N103A; N105A and work place requirements in 'Work site protection' have been acquired. N102A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G106A; G107A; G108A; G109A;
UEENEEN110A	Install and maintain non-vital telemetry systems	40	4	E101A and work place requirements in 'Work site protection' have been acquired.
UEENEEN111A	Install and maintain trackside signal and train protection equipment	40	4	N109A and work place requirements in 'Work site protection' have been acquired. N103A; N105A; N102A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;
UEENEEN112A	Install and maintain vital relay interlocking systems	40	4	N107A; N108A; N111A and work place requirements in 'Work site protection' have been acquired. N109A and work place requirements in 'Work site protection' have been acquired. N109A; N103A; N105A; N102A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				G106A; G107A; G108A; G109A;
UEENEEN114A	Install and maintain computer based interlocking rail systems	30	4	N107A; N108A; N109A and work place requirements in 'Work site protection' have been acquired. N109A; N103A; N105A; N102A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;
UEENEEN116A	Maintain electronic and microprocessor-based remote control systems	20	4	Relevant work place requirements in 'Work site protection' have been acquired.
UEENEEN118A	Find and repair rail signalling system faults	20	4	N112A; or N114A and work place requirements in 'Work site protection' have been acquired. N107A; N108A; N109A; N103A; N105A; N102A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEEN121A	Repair rail signalling power and control cables	40	3	N102A and Work place requirements in 'Work site protection' have been acquired. G104A; E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G106A; G107A; G108A; G109A;
UEENEEN126A	Develop rail signalling system maintenance programs	20	4	Relevant work place requirements in 'Work site protection' have been acquired.
UEENEEN127A	Decommission electrical and electro-mechanical rail signalling from service	20	4	Relevant work place requirements in 'Work site protection' have been acquired.
UEENEEN128A	Test and commission rail power equipment	20	4	Relevant work place requirements in 'Work site protection' have been acquired.

P - Restricted units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEPP010A	Disconnect / reconnect appliances connected to low voltage installation wiring	60	3	E101A Competencies needed for emergency

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
				services and equipment repair.
UEENEPP011A	Disconnect / reconnect neon signs connected to low voltage installation wiring	60	3	E101A Competencies needed for emergency services and equipment repair.
UEENEPP012A	Disconnect / reconnect composite appliances connected to low voltage installation wiring	60	3	E101A Competencies needed for emergency services and equipment repair.
UEENEPP013A	Disconnect / reconnect control devices connected to low voltage installation wiring	60	3	E101A Competencies needed for emergency services and equipment repair.
UEENEPP014A	Disconnect / reconnect water heaters connected to low voltage installation wiring	60	3	E101A Competencies needed for emergency services and equipment repair.
UEENEPP015A	Disconnect / reconnect motors connected to low voltage installation wiring	60	3	E101A Competencies needed for emergency services and equipment repair.
UEENEPP016A	Locate and rectify faults in low voltage appliances using set procedures	20	3	P010A; E101A
UEENEPP017A	Locate and rectify faults in low voltage composite appliances using set procedures	20	3	P012A; E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEPP018A	Locate and rectify faults in low voltage control devices using set procedures	20	3	P013A; E101A
UEENEPP019A	Locate and rectify faults in low voltage water heaters using set procedures	20	3	P014A; E101A
UEENEPP020A	Locate and rectify faults in low voltage motors using set procedures	20	3	P015A; E101A
UEENEPP021A	Disconnect / reconnect explosion-protected appliances and control devices connected to low voltage installation wiring	60	3	P013A; E101A
UEENEPP022A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles	60	3	Competencies needed for mechanical maintenance of HV electric propulsion components off-road earth moving trucks.
UEENEPP023A	Attach flexible cables and plugs to electrical equipment connected to a HV supply	40	3	P025A; P024A; E101A
UEENEPP024A	Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply	20	2	E101A
UEENEPP025A	Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. supply	20	3	P025A; E101A

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEER026A	Conduct in-service safety testing of electrical cord connected equipment and cord assemblies	20	2	E101A

R - Research units

Unit Code	Unit Title	Wtg. Pts	AQF Level	Prerequisite/s
UEENEER001B	Contribute to the planning of a research project	120	5	None
UEENEER002B	Contribute to the conduct of a research project	120	5	None
UEENEER003B	Contribute to the development of a product/application/service	120	5	None
UEENEER004B	Contribute to the trial of a product/application/service	120	5	None
UEENEER005B	Contribute to Intellectual Property management	120	5	None
UEENEER006B	Contribute to the commercialisation of products/applications/services	120	5	None

Imported Units

Unit Code	Unit Title	Weighting Points
BSBCUS401A	Coordinate implementation of customer service strategies	40

BSBINM401A	Implement workplace information system	40
BSBINM501A	Manage an information or knowledge management system	50
BSBINN301A	Promote innovation in a team environment	40
BSBINN502A	Build and sustain an innovative work environment	50
BSBLED401A	Develop teams and individuals	40
BSBMGT402A	Implement operational plan	40
BSBMGT403A	Implement continuous improvement	40
BSBMGT502B	Manage people performance	70
BSBMGT516C	Facilitate continuous improvement	60
BSBWOR401A	Establish effective workplace relationships	50
BSBWOR402A	Promote team effectiveness	50
BSBWOR404B	Develop Work Priorities	40
BSBWOR502B	Ensure team effectiveness	60
CPCCOHS1001 A	Work safely in the construction industry	10
CPCPCM2023A	Carry out OHS requirements	10
CPCPMS3015A	Install and test ducting systems	10
HLTCPR201B	Perform CPR	10
HLTFA301C	Apply first aid	10
ICTTEN2207A	Install and configure a home or small office network	60
ICTTEN2208A	Install and configure a small to medium business network	60
ICTTEN2209A	Build and maintain a secure network	80
ICTTEN3056A	Install telecommunications network equipment	40
ICTTEN4210A	Implement and troubleshoot enterprise routers and switches	100
ICTTEN4211A	Design, install and configure an internetwork	100

ICTTEN4212A	Apply advanced routing protocols to network design	80
ICTTEN4213A	Configure and troubleshoot advanced network switching	80
ICTTEN4214A	Install and maintain a wide area network	80
MSACMS200A	Apply competitive manufacturing practices	20
MSACMT220A	Apply quick changeover procedures	20
MSACMT221A	Apply Just in Time (JIT) procedures	20
MSACMT240A	Apply 5S procedures in a manufacturing environment	20
MSACMT280A	Undertake root cause analysis	20
MSACMT281A	Contribute to the application of a proactive maintenance strategy	20
MEM05007C	Perform manual heating and thermal cutting	20
MEM05012C	Perform routine manual metal arc welding	20
MEM16006A	Organise and communicate information	20
MEM16008A	Interact with computing technology	20
MEM30001A	Use computer aided drafting systems to produce basic engineering drawings	40
MEM30002A	Produce basic engineering graphics	40
MEM30003A	Produce detailed engineering drawings	40
MEM30004A	Use CAD to create and display 3D models	40
NWP209B	Use maps, plans, drawings and specifications	30
NWP210B	Perform basic water quality tests	20
NWP218B	Perform and record sampling	20
NWP226B	Prepare and restore work site	30
NWP227B	Control vegetation on a site	20
NWP229B	Repair minor structures	20
NWP243B	Operate bore fields and groundwater source systems	20

NWP245B	Maintain tanks and water storage assets	30
NWP247A	Maintain catchment and surrounding areas	40
NWP253B	Install and repair water services	40
NWP255B	Maintain and repair wastewater collection assets	20
NWP256B	Monitor and report water distribution systems	30
NWP257B	Maintain and repair wastewater collection systems	30
NWP259B	Operate, monitor and maintain pump stations	30
NWP260A	Monitor and report water treatment processes	30
NWP261A	Operate and maintain water treatment plant and equipment	30
NWP262A	Monitor and report wastewater treatment processes	30
NWP263A	Operate and maintain wastewater treatment plant and equipment	30
NWP268B	Monitor, operate and report chlorine disinfection systems	30
NWP276A	Monitor, operate and report fluoridation processes	20
PMASUP410B	Develop plant documentation	
PRMPFES43A	Prevent ozone depleting substance and synthetic greenhouse gas emissions	10
RIIOHS202A	Enter and work in confined spaces	30
RIIOHS204A	Work safely at heights	20
RIIOHS205A	Control traffic with stop-slow bat	10
RIIRAI609A	Establish and maintain electrical installations, reticulation and protection system	120
RIIRIS601A	Establish and maintain the risk management system	100
TLID3035A	Operate a boom type elevating work platform	30
TLILIC108A	Licence to operate a forklift truck	40
TLILIC2005A	Licence to operate a boom-type elevating work platform (boom length 11 meters or more)	40

TLIS2004A	Install and maintain rail bonding systems	40
UEPOPS202A	Apply Quality Systems To Work	20
UEPOPS337A	Maintain Quality Systems within the Team	20
UEPOPS416A	Monitor the Implementation of the Enterprise's Production / Maintenance Quality Control procedures	20
UETTDRIS43A	Perform low voltage field switching operation to a given schedule.	50
UETTDRIS44A	Perform HV field switching operation to a given schedule	40
UETTDRIS47A	Sample, test, filter and reinstate insulating oil	40
UETTDRIS67A	Solve problems in energy supply network equipment	80
UETTDRIS68A	Solve problems in energy supply network protection equipment and systems	40
UETTDRIS69A	Diagnose and rectify faults in energy supply apparatus	60
UETTDRIS70A	Diagnose and rectify faults in electrical energy distribution systems	60
UETTDRIS71A	Diagnose and rectify faults in electrical energy supply transmission systems	60
UETTDRIS72A	Diagnose and rectify faults in distributed Generation systems	60
UETTDRIS73A	Develop engineering solutions for energy supply power transformer problems	60
UETTDRIS74A	Develop engineering solutions for energy supply system protection problems	60
UETTDRSB39A	Perform power system substation switching operation to a given schedule	50

1.2.09 Unit Relationships UEE11 V1 to UEE07 V4

2.9 Unit relationships UEE11 V1 to UEE07 v4

Table 1 Relationship of UEE11 Electrotechnology Training Package V1 to UEE07 Version4.

This table maps relationship between units which have been replaced, removed or added in UEE11 Electrotechnology Training Package V1. All units not listed in this table remain unchanged in UEE11 V1. Please consult the mapping tables for previous versions below for information on these units.

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
A – Assembly units				
UEENEEA10 1A	Assemble electronic components	UEENEEA00 1B	Assemble electronic apparatus	E
UEENEEA10 2A	Select electronic components for assembly	UEENEEA00 2B	Select electronic components	E
UEENEEA10 3A	Set up and check electronic component assembly machines	UEENEEA00 3B	Set up and check electronic component placement machines	E
UEENEEA10 4A	Modify electronic sub assemblies	UEENEEA00 4B	Rework electronic sub assemblies	E
UEENEEA10 5A	Conduct quality and functional tests on assembled electronic apparatus	UEENEEA00 5B	Conduct functional and quality tests on assembled electronic apparatus	E
UEENEEA10 6A	Use lead-free soldering techniques	UEENEEA00 6B	Apply lead-free soldering techniques	E
UEENEEA10 7A	Make up wiring looms for internal wiring of appliances and machinery		New Unit	
UEENEEA11 0A	Assemble, mount and connect control gear and switchgear	UEENEEA01 0B	Assemble, mount and connect switchgear and controlgear	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEA11 2A	Fabricate and assemble bus bars	UEENEEA01 2B	Make up and assemble bus bars	E
UEENEEA11 3A	Mount and wire control panel equipment	UEENEEA01 3B	Assemble and wire control panels	E

B – Broadcast technology units

UEENEED10 1A	Operate and maintain amateur radio communication stations	UEENEED00 1B	Operate and maintain an amateur radio communication station	E
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C – Commercial units

	Removed	UEENEED01 5B	Participate in custom electronic installations work and competency development activities	
	Removed	UEENEED02 8B	Participate in hazardous areas work and competency development activities	
	Removed	UEENEED02 9B	Participate in explosion-protected equipment overhaul work and competency development activities	

D – Computerised Systems units

UEENEED10 1A	Use computer applications relevant to a workplace	UEENEED00 1B	Use basic computer applications relevant to a workplace	E
UEENEED10	Assemble, set-up and test computing	UEENEED00	Assemble, set up and test personal	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
2A	devices	2B	computers	
UEENEED10 3A	Evaluate and modify object oriented code programs	UEENEED00 3B	Evaluate and modify programs written in object oriented code	E
UEENEED10 4A	Use engineering applications software on personal computers	UEENEED00 4B	Use engineering applications software	E
	Removed	UEENEED00 5B	Enter and verify operating instructions in microprocessor equipped devices	
	Removed	UEENEED00 7B	Develop, enter and verify programs for programmable logic controllers using ladder instruction set	
	Removed	UEENEED00 8B	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems	
	Removed	UEENEED00 9B	Develop, enter and verify programs for industrial control systems using high level instructions	
UEENEED11 0A	Set up, create and implement content for a web server	UEENEED01 0B	Set up and create content for a web server	E
UEENEED11 1A	Develop, implement and test object oriented code	UEENEED01 1B	Develop object oriented code	E
UEENEED11 2A	Support computer hardware and	UEENEED01 2B	Support computer hardware and	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	software for engineering applications		software	
UEENEED11 3A	Install and administer Unix based networked computers	UEENEED01 3B	Install and administer Unix based computers	E
UEENEED11 4A	Design and manage enterprise computer networks	UEENEED01 4B	Design and manage enterprise networks	E
UEENEED11 5A	Administer computer networks	UEENEED01 5B	Administer user networks	E
UEENEED11 6A	Develop computer network services	UEENEED01 6B	Develop network services	E
UEENEED11 7A	Install and configure network systems for internetworking	UEENEED01 7B	Install and configure Internetworking systems	E
UEENEED11 8A	Design and implement network systems for internetworking	UEENEED01 8B	Design and implement Internetworking systems	E
UEENEED11 9A	Design and implement advanced routing for internetworking systems	UEENEED01 9B	Design and implement Internetworking systems — advanced routing	E
UEENEED12 0A	Design and implement remote access for Internetworking systems	UEENEED02 0B	Design and implement Internetworking systems — remote access	E
UEENEED12 1A	Design and implement multi-layer switching for Internetworking systems	UEENEED02 1B	Design and implement Internetworking systems — multi-layer switching	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEED12 2A	Design and implement security for Internetworking systems	UEENEED02 2B	Design and implement Internetworking systems — security	E
UEENEED12 3A	Design and implement wireless LANs/WANs for internetworking systems	UEENEED02 3B	Design and implement Internetworking systems — wireless LANs/WANs	E
UEENEED12 4A	Integrate multiple computer operating systems on a client server local area network	UEENEED02 4B	Integrate multiple computer operating systems on a client server network	E
	Removed	UEENEED02 5B	Design and configure Human-Machine Interface networks	
	Removed	UEENEED02 6B	Design a computer based control system	
	Removed	UEENEED02 7B	Develop structured programs to control external devices	
	Removed	UEENEED02 8B	Develop and test code for microcontroller devices	
UEENEED12 9A	Develop web pages for engineering applications	UEENEED02 9B	Develop basic web pages for engineering applications	E
UEENEED13 0A	Select, install, configure and test multimedia components	UEENEED03 0B	Select, install, configure and test multimedia devices	E
	Removed	UEENEED03 1B	Develop and validate basic integrated	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
			systems	
	Removed	UEENEED03 2B	Design integrated systems	
	Removed	UEENEED03 3B	Design complex integrated systems	
	Removed	UEENEED03 4B	Configure and maintain industrial control system networks	
UEENEED14 3A	Install and configure a client computer operating system and software	UEENEED04 3B	Install and configure a computer operating system and software	E
UEENEED14 4A	Commission industrial computer systems	UEENEED04 4B	Commission computer systems	E
UEENEED14 5A	Modify-redesign of industrial computer systems	UEENEED04 5B	Modify-redesign of computer system	E
UEENEED14 6A	Set up and configure basic local area network (LAN)	UEENEED04 6B	Set up and configure basic local area network	E
UEENEED14 8A	Plan industrial computer systems projects	UEENEED04 8B	Plan computer systems projects	E
UEENEED15 0A	Develop industrial control programs for microcomputer equipped devices	UEENEED05 0B	Develop control programs for micro-computer equipped devices	E
UEENEED15 1A	Provide programming solution for computer systems engineering problems	UEENEED05 1B	Provide programming solution for engineering problems	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEED15 2A	Design embedded controller control systems	UEENEED05 2B	Design embedded controller systems	E
UEENEED15 3A	Set up, configure and test biometric devices	UEENEED05 3B	Set up and test biometric devices	E
UEENEED15 4A	Analyse and implement biometric measuring techniques and applications	UEENEED05 4B	Analyse and implement biometric techniques and applications	E
UEENEED15 5A	Develop and validate biometric equipment/systems installation	UEENEED05 5B	Develop and validate biometric systems installation instructions	E
UEENEED14 7A	Develop energy sector directory services		New Unit	
UEENEED14 9A	Develop energy sector computer network applications infrastructure		New Unit	

E – Cross-discipline units

UEENEEE10 1A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	UEENEEE001 B	Apply OHS practices in the workplace	E
UEENEEE10 2A	Fabricate, assemble and dismantle utilities industry components	UEENEEE002 B	Dismantle, assemble and fabricate electrotechnology components	E
UEENEEE10 3A	Solve problems in ELV single path circuits	UEENEEE003 B	Solve problems in extra-low voltage single path circuits	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEE104A	Solve problems in d.c. circuits	UEENEEE004B	Solve problems in multiple path d.c. circuits	E
UEENEEE105A	Fix and secure electrotechnology equipment	UEENEEE005B	Fix and secure equipment	E
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	UEENEEE007B	Use drawings, diagrams, schedules and manuals	E
UEENEEE108A	Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits	UEENEEE008B	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	E
UEENEEE110A	Develop and implement energy sector maintenance programs	UEENEEE010B	Develop and implement maintenance programs	E
UEENEEE114A	Supervise and coordinate energy sector work activities	UEENEEE014B	Supervise and coordinate work activities	E
	Removed	UEENEEE016B	Write specifications for electrotechnology projects	
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	UEENEEE017B	Implement and monitor OHS policies and procedures	E
UEENEEE118A	Establish, maintain and evaluate energy sector OHS systems	UEENEEE018B	Establish, maintain and evaluate OHS systems	E
UEENEEE119A	Solve problems in multiple path extra low voltage (ELV)	UEENEEE019C	Solve problems in multiple path a.c.	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	a.c. circuits		circuits	
UEENEEE121 A	Plan an integrated cabling installation system	UEENEEE021 B	Plan an integrated cabling system	E
UEENEEE122 A	Carry out preparatory energy sector work activities	UEENEEE022 B	Carry out preparatory electrotechnology work activities	E
UEENEEE123 A	Solve basic problems electronic and digital equipment and circuits	UEENEEE023 B	Solve basic problems in electronic and digital equipment	E
UEENEEE124 A	Compile and produce an energy sector detailed report	UEENEEE024 C	Compile and produce an electrotechnology report	E
	Removed	UEENEEE025 B	Solve problems in complex multiple path circuits	
	Removed	UEENEEE026 B	Provide computational solutions to basic engineering problems	
UEENEEE127 A	Use advanced computational processes to provide solutions to energy sector engineering problems	UEENEEE027 B	Use advanced computational processes to provide solutions to engineering problems	E
UEENEEE128 A	Develop engineering solutions to photonic system problems	UEENEEE028 B	Develop engineering solutions to photonic problems	E
UEENEEE129 A	Solve electrotechnical engineering problems	UEENEEE029 B	Solve electrotechnical problems	E
UEENEEE130 A	Provide solutions and report on routine	UEENEEE030 B	Provide solutions to and report on routine	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	electrotechnology problems		electrotechnology problems	
	Removed	UEENEEE032 B	Document occupational hazards and risks in computer systems	
	Removed	UEENEEE033 B	Document occupational hazards and risks in electrical	
	Removed	UEENEEE034 B	Document occupational hazards and risks in electronics	
	Removed	UEENEEE035 B	Document occupational hazards and risks in instrumentation	
	Removed	UEENEEE036 B	Document occupational hazards and risks in refrigeration and air-conditioning	
	Removed	UEENEEE037 B	Document occupational hazards and risks in electrotechnology	
UEENEEE141 A	Use of routine equipment/plant/technologies in an energy sector environment	UEENEEE041 B	Use of routine equipment/plant/technologies in an electrotechnology environment	E
UEENEEE142 A	Produce products for carrying out energy sector work activities	UEENEEE042 B	Produce routine products for carrying out electrotechnology work activities	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEE143 A	Produce routine tools/devices for carrying out energy sector work activities	UEENEEE043 B	Produce routine tools/devices for carrying out electrotechnology work activities	E
UEENEEE144 A	Apply technologies and concepts to energy sector work activities	UEENEEE044 B	Apply technologies and concepts to electrotechnology work activities	E
UEENEEE145 A	Apply computation when using equipment/materials/ concepts in an energy sector environment	UEENEEE045 B	Apply computation when using equipment, materials and concepts in an electrotechnology environment	E
UEENEEE146 A	Identify effects of energy on machinery and materials in an energy sector environment	UEENEEE046 B	Identify affects of energy on machinery and materials in an electrotechnology environment	E
UEENEEE147 A	Identify building techniques, methods and materials used in energy sector work activities	UEENEEE047 B	Identify building techniques, methods and materials used in electrotechnology work activities	E
UEENEEE148 A	Carry out routine work activities in an energy sector environment	UEENEEE048 C	Carry out routine work activities in an electrotechnology environment	E
UEENEEE149 A	Contribute to the operation of support plant and equipment used in electricity supply industry	UEENEEE049 B	Contribute to the operation of support plant and equipment used in electricity supply	E
UEENEEE150 A	Undertake computations in an energy sector	UEENEEE050 B	Undertake computations in an electrotechnology	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	environment		environment	
UEENEEE151 A	Transport apparatus, equipment and materials	UEENEEE051 B	Transport apparatus and materials	E
UEENEEE160 A	Provide engineering solutions for uses of materials and thermodynamic effects	UEENEEE060 B	Provide solutions for uses of materials and thermodynamic effects	E
UEENEEE161 A	Analyse static and dynamic parameters of electrical equipment	UEENEEE061 B	Analyse static and dynamic parameters of equipment	E
UEENEEE162 A	Select drive components for electrical equipment design	UEENEEE062 B	Select drive components for equipment design	E
UEENEEE163 A	Analyse materials for suitability in electrical equipment	UEENEEE063 B	Analyse materials for suitability in equipment	E
UEENEEE164 A	Design electrical machine drives and production layout plans	UEENEEE064 B	Design machine drives and production layout plans	E
UEENEEE179 A	Identify and select components, accessories and materials for energy sector work activities	UEENEEE079 A	Identify and select components, accessories and materials for electrotechnology work activities	E
UEENEEE103 A	Solve problems in ELV single path circuits		New Unit	
UEENEEE131 A	Solve problems in ELV circuits for non		New Unit	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	electrical workers			
UEENEEE152 A	Observe safety practices are followed in the vicinity of isolated electrical cables		New Unit	
UEENEEE185 A	Write work activity reports		New Unit	
UEENEEE190 A	Prepare engineering drawings using manual drafting and CAD for electrotechnology/utilities applications		New Unit	
UEENEEE191 A	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software		New Unit	
UEENEEE192 A	Produce detailed electrotechnology /utilities drawings using computer aided design equipment and software		New Unit	

F – Data and voice communication units

UEENEEF101 A	Install and connect cabling for direct access to telecommunications service		New Unit	
UEENEEF102 A	Install and maintain cabling for multiple access to	UEENEEF002 B	Lay and connect cables for multiple access to	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	telecommunication services		telecommunication services	
UEENEEF103 A	Install and maintain telecommunication cabling for services in lifts	UEENEEF003 B	Install and maintain cabling for telecommunication services in lifts	E
UEENEEF104 A	Install and modify performance data communication copper cabling	UEENEEF004 B	Install and modify performance data communication structured cabling	E
UEENEEF105 A	Install and modify optical fibre performance data communication cabling	UEENEEF005 B	Install and modify performance data communication optical fibre cabling	E
UEENEEF106 A	Solve problems in voice and data communications circuits	UEENEEF006 B	Solve problems in data and voice communications circuits	E
UEENEEF107 A	Set up and configure the wireless capabilities of communications and data storage devices	UEENEEF007 B	Set up the wireless capabilities of communications and data storage devices	E
UEENEEF108 A	Select and arrange equipment for wireless communication networks	UEENEEF008 B	Select and arrange equipment for wireless networks	E
UEENEEF109 A	Install and connect data and voice communication equipment	UEENEEF009 B	Install and connect voice and data communications equipment	E
UEENEEF110 A	Select and arrange data and voice equipment for local	UEENEEF010 B	Select and arrange equipment for local area networks	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	area networks			
UEENEEF111 A	Test, report and rectify faults in data and voice installations	UEENEEF011 B	Test, report and rectify faults in voice and data installations	E
UEENEEF112 A	Install aerial telecommunication cables	UEENEEF012 B	Install aerial communication cables	E
UEENEEF113 A	Install underground communication cables	UEENEEF013 B	Install below ground communication cables	E
UEENEEF114 A	Set up and configure basic data communication systems	UEENEEF014 B	Set up and configure basic data communications systems	E
UEENEEF115 A	Assemble and connect telecommunication frames and cabinets	UEENEEF015 B	Assemble and connect communication frames and cabinets	E
	Removed	UEENEEF016 A	Lay and connect cabling for direct access to telecommunications services	

G – Electrical units

UEENEEG10 1A	Solve problems in electromagnetic devices and related circuits	UEENEEG00 1B	Solve problems in electromagnetic circuits	E
UEENEEG10 2A	Solve problems in low voltage a.c. circuits	UEENEEG00 2B	Solve problems in single and three phase low voltage circuits	E
UEENEEG10 3A	Install low voltage wiring and	UEENEEG00 3B	Install wiring and accessories for low	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	accessories		voltage circuits	
UEENEEG10 4A	Install appliances, switchgear and associated accessories for low voltage electrical installations	UEENEEG00 4B	Install low voltage electrical apparatus and associated equipment	E
UEENEEG10 5A	Verify compliance and functionality of low voltage general electrical installations	UEENEEG00 5B	Verify compliance and functionality of general electrical installations	E
UEENEEG10 7A	Select wiring systems and cables for low voltage general electrical installations	UEENEEG00 7B	Select and arrange equipment for general electrical installations	E
UEENEEG10 8A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	UEENEEG00 8B	Find and repair faults in electrical apparatus and circuits	E
UEENEEG10 9A	Develop and connect electrical control circuits	UEENEEG00 9B	Develop and connect control circuits	E
UEENEEG11 0A	Find and repair faults in LV d.c. electrical apparatus and circuits	UEENEEG01 0B	Find and repair faults in d.c. electrical apparatus and circuits	E
UEENEEG11 1A	Carry out basic repairs to electrical components and equipment	UEENEEG01 1B	Carry out basic repairs to electrical apparatus	E
	Removed	UEENEEG01 2B	Solve fundamental problems in electrical systems	
UEENEEG11 3A	Install and maintain emergency safety systems	UEENEEG01 3B	Install and maintain emergency systems	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	Removed	UEENEEG01 5B	Find and rectify faults in energy supply network equipment	
UEENEEG11 6A	Diagnose and rectify faults in traction lift systems	UEENEEG01 6B	Diagnose and rectify faults in lift systems	E
UEENEEG11 8A	Maintain operation of electrical mining equipment and systems	UEENEEG01 8B	Maintain operation of electrical mining equipment	E
UEENEEG11 9A	Maintain operation of electrical marine equipment and systems	UEENEEG01 9B	Maintain operation of electrical marine equipment	E
UEENEEG12 0A	Select and arrange equipment for special LV electrical installations	UEENEEG02 0B	Select and arrange equipment for special electrical installations	E
UEENEEG12 1A	Verify compliance and functionality of special LV electrical installations	UEENEEG02 1B	Verify compliance and functionality of special electrical installations	E
UEENEEG12 2A	Conduct compliance inspection of single phase LV electrical installations	UEENEEG02 2B	Conduct compliance inspection of single phase electrical installations	E
UEENEEG12 3A	Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase	UEENEEG02 3B	Conduct compliance inspection of electrical installations with demand exceeding 100 A per phase	E
UEENEEG12 4A	Conduct compliance inspection of special LV electrical	UEENEEG02 4B	Conduct compliance inspection of special electrical installations	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	installations			
UEENEEG12 5A	Plan electrical installations with a low voltage demand up to 400 A per phase	UEENEEG02 5B	Plan electrical installations with a LV demand up to 400 A per phase	E
UEENEEG12 6A	Install and maintain field power and distribution systems with a low voltage demand up to 200 A per phase	UEENEEG02 6B	Install and maintain field power and distribution systems with a LV demand up to 200 A per phase	E
UEENEEG12 7A	Design electrical installations with a low voltage demand greater than 400 A per phase	UEENEEG02 7B	Design electrical installations with a LV demand greater than 400 A per phase	E
UEENEEG12 8A	Plan low voltage switchboard and control panel layouts	UEENEEG02 8B	Plan switchboard and control panel layouts	E
UEENEEG12 9A	Overhaul and repair major switchgear and controlgear	UEENEEG02 9B	Overhaul and repair major switchgear/controlgear	E
UEENEEG13 0A	Design switchboards rated for high fault levels (greater than 400 A)	UEENEEG03 0B	Design switchboards rated for high fault levels	E
UEENEEG13 1A	Evaluate performance of low voltage electrical apparatus	UEENEEG03 1B	Evaluate performance of electrical apparatus	E
UEENEEG13 2A	Carry out low voltage electrical field testing and report findings	UEENEEG03 2B	Carry out electrical field testing and report findings	E
	Removed	UEENEEG03 4B	Perform high voltage field switching to a	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
			given schedule	
	Removed	UEENEEG03 5B	Diagnose and rectify faults in a.c. motor drive systems	
	Removed	UEENEEG03 6B	Diagnose and rectify faults in d.c. motor drive systems	
	Removed	UEENEEG03 7B	Diagnose and rectify faults in energy supply apparatus	
	Removed	UEENEEG03 8B	Diagnose and rectify faults in electrical energy distribution systems	
	Removed	UEENEEG03 9B	Diagnose and rectify faults in distributed generation systems	
	Removed	UEENEEG04 0B	Develop engineering solutions for energy supply power transformer problems	
	Removed	UEENEEG04 1B	Diagnose and rectify faults in servo drive systems	
	Removed	UEENEEG04 2B	Diagnose and rectify faults in electrical energy supply transmission systems	
UEENEEG14 3A	Develop engineering solution for synchronous machine and control problems	UEENEEG04 3B	Develop engineering solution for synchronous machine problems	E
UEENEEG14	Develop engineering solutions for d.c.	UEENEEG04	Develop engineering solutions for d.c.	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
4A	machine and control problems	4B	machine problems	
UEENEEG14 5A	Develop engineering solutions for induction machine and control problems	UEENEEG04 5B	Develop engineering solutions for induction motor problems	E
	Removed	UEENEEG04 6B	Develop engineering solutions for energy supply system protection problems	
	Removed	UEENEEG04 7B	Provide computational solutions to power engineering problems	
	Removed	UEENEEG04 8B	Solve problems in complex multiple path power circuits	
	Removed	UEENEEG04 9B	Solve problems in complex polyphase power circuits	
UEENEEG15 0A	Wind electrical coils	UEENEEG05 0B	Wind coils	E
UEENEEG15 1A	Place and connect electrical coils	UEENEEG05 1B	Place and connect coils	E
UEENEEG15 2A	Rewind single phase machines	UEENEEG05 2B	Rewind single phase induction machines	E
UEENEEG15 3A	Rewind three phase low voltage induction machines	UEENEEG05 3B	Rewind three phase induction machines rated for low voltage	E
UEENEEG15 4A	Rewind LV direct current machines	UEENEEG05 4B	Rewind direct current machines rated for low voltage	E
UEENEEG15	Rewind HV three	UEENEEG05	Rewind three phase	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
5A	phase induction machines rated for voltages to 3.3 kV	5B	induction machines rated for high voltage to 3.3 kV	
UEENEEG15 6A	Rewind HV three phase induction machines rated for voltages above 3.3 kV	UEENEEG05 6B	Rewind three phase induction machines rated for high voltage above 3.3 kV	E
UEENEEG15 7A	Conduct electrical tests on LV electrical machines	UEENEEG05 7B	Conduct electrical tests on low voltage electrical machines	E
UEENEEG15 8A	Conduct electrical tests on HV electrical machines	UEENEEG05 8B	Conduct electrical tests on high voltage electrical machines	E
UEENEEG15 9A	Conduct mechanical tests on electrical machines and components	UEENEEG05 9B	Conduct mechanical tests on electrical machines	E
UEENEEG16 0A	Evaluate performance of LV electrical machines	UEENEEG06 0B	Evaluate performance of electrical machines	E
UEENEEG16 1A	Design and develop modifications to LV electrical machines	UEENEEG06 1B	Design and develop modifications to electrical machines	E
UEENEEG16 2A	Set up and place LV electrical apparatus and associated circuits into service	UEENEEG06 2B	Set up and place electrical apparatus and associated circuits into service	E
UEENEEG16 4A	Repair and maintain mechanical components of electrical machines	UEENEEG06 4B	Repair mechanical components of electrical machines	E
UEENEEG16 5A	Maintain and service traction lifts systems and equipment	UEENEEG06 5B	Maintain and service traction lifts	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEG16 6A	Install and maintain escalators, moving walks and treadways	UEENEEG06 6B	Installation and maintenance of escalators, moving walks and tread ways	E
UEENEEG16 7A	Align and install traction lift equipment	UEENEEG06 7B	Align and install lift equipment	E
UEENEEG16 8A	Diagnose and rectify faults in complex lift systems	UEENEEG06 8B	Diagnose and rectify faults in complex lift systems	E
UEENEEG16 9A	Manage large electrical projects	UEENEEG06 9B	Manage electrical projects	E
UEENEEG17 0A	Plan large electrical projects	UEENEEG07 0B	Plan electrical projects	E
	Removed	UEENEEG07 1C	Install and set up interval metering	
UEENEEG17 2A	Investigate and report on electrical incidents and causes	UEENEEG07 2C	Investigate and report on electrical incidents	E
UEENEEG17 5A	Develop compliance policies and plans to conduct a electrical contracting business	UEENEEG07 5A	Develop compliance policies and plans to conduct a contracting business	E
UEENEEG17 7A	Select low voltage power factor correction equipment		New Unit	
UEENEEG17 9A	Develop detailed electrical drawings		New Unit	
UEENEEG18 0A	Develop detailed and complex drawings for electrical systems using CAD systems		New Unit	
UEENEEG18	Provide advice on		New Unit	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
1A	effective and energy efficient lighting products			
UEENEEG18 2A	Supply effective and efficient lighting products for domestic and small commercial applications		New Unit	
UEENEEG18 3A	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect		New Unit	
UEENEEG18 4A	Provide photometric data for illumination system design		New Unit	
UEENEEG18 5A	Select effective and efficient light sources and luminaires for given locations and designs		New Unit	
UEENEEG18 6A	Design effective and efficient lighting for residential and commercial buildings		New Unit	
UEENEEG18 7A	Design effective and efficient lighting for public, open and sports areas		New Unit	
UEENEEG18 8A	Prepare quotations for the supply of effective and efficient lighting products for lighting projects		New Unit	
UEENEEG18 9A	Install and maintain emergency lighting		New Unit	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	systems			
UEENEEG19 7A	Apply currency of safe working practices and compliance verification of electrical installations		New Unit	
UEENEEG19 8A	Apply compliance requirements to all aspects of electrical work		New Unit	
UEENEEG19 9A	Conduct compliance and functional verification of electrical apparatus and existing circuits		New Unit	

H – Electronics units

UEENEEH10 1A	Repair basic computer equipment faults by replacement of modules/sub-assemblies	UEENEEH00 1B	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies	E
UEENEEH10 2A	Repairs basic electronic apparatus faults by replacement of components	UEENEEH00 2B	Carry out basic repairs to electronic apparatus by replacement of components	E
UEENEEH10 3A	Repair routine business equipment faults	UEENEEH00 3B	Carry out routine repairs to business equipment	E
UEENEEH10 4A	Set up and test residential video/audio equipment	UEENEEH00 4B	Set up and test residential audio/video equipment	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEH10 5A	Verify functionality and compliance of custom electronic installations	UEENEEH00 5B	Verify compliance and functionality of custom electronic installations	E
UEENEEH10 6A	Assemble and set up fixed video/audio components and systems in buildings and premises	UEENEEH00 6B	Assemble and set up fixed audio/video components and systems in buildings and premises	E
UEENEEH10 7A	Repair predictable faults in general electronic apparatus	UEENEEH00 7B	Carry out repairs of predictable faults in general electronic apparatus	E
UEENEEH10 8A	Assemble and install reception antennae and signal distribution equipment	UEENEEH00 8B	Assemble and erect reception antennae and signal distribution equipment	E
UEENEEH10 9A	Set up and test gaming and game equipment	UEENEEH00 9B	Set up and test gaming/games equipment	E
UEENEEH11 0A	Install commercial video/audio system components	UEENEEH01 0B	Install commercial audio/video system components	E
UEENEEH11 1A	Troubleshoot single phase input d.c. power supplies	UEENEEH01 1B	Troubleshoot d.c. power supplies with single phase input	E
UEENEEH11 2A	Troubleshoot digital sub-systems	UEENEEH01 2B	Troubleshoot digital subsystems	E
UEENEEH11 3A	Troubleshoot amplifiers in an electronic apparatus	UEENEEH01 3B	Troubleshoot amplifiers	E
UEENEEH11 4A	Troubleshoot resonance circuits in an electronic	UEENEEH01 4B	Troubleshoot frequency dependent	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	apparatus		circuits	
UEENEEH11 5A	Develop software solutions for microcontroller based systems	UEENEEH01 5B	Develop software solutions in microcontroller based systems	E
UEENEEH11 6A	Find and repair microwave amplifier section faults in electronic apparatus	UEENEEH01 6B	Find and repair faults in the microwave amplifier sections in electronic apparatus	E
UEENEEH11 7A	Carry out repairs of predictable faults in video and audio replay/recording apparatus	UEENEEH01 7B	Carry out repairs of predictable faults in audio and video replay/recording apparatus	E
UEENEEH11 8A	Fault find and repair electronic apparatus	UEENEEH01 8B	Find and repair faults in electronic apparatus	E
UEENEEH11 9A	Repair predictable faults in television receivers	UEENEEH01 9B	Carry out repairs of predictable faults in television receivers	E
UEENEEH12 0A	Fault find and repair gaming and games equipment	UEENEEH02 0B	Find and repair faults in gaming and games equipment	E
UEENEEH12 1A	Fault find and repair high volume office equipment	UEENEEH02 1B	Find and repair faults in high volume office equipment	E
UEENEEH12 2A	Fault find and repair remote control apparatus	UEENEEH02 2B	Find and repair faults in remote control apparatus	E
UEENEEH12 3A	Fault find and repair microwave heating apparatus	UEENEEH02 3B	Find and repair faults in microwave heating apparatus	E
UEENEEH12	Repair predictable faults in audio	UEENEEH02	Carry out repairs of predictable faults in	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
4A	components	4B	audio components	
	Removed	UEENEEH02 5B	Provide solutions to single phase electronic power control problems	
	Removed	UEENEEH02 6B	Provide solutions to polyphase electronic power control problems	
UEENEEH12 7A	Set up and adjust commercial radio frequency (RF) transmission and reception systems	UEENEEH02 7B	Commission commercial radio frequency (RF) transmission and reception systems	E
UEENEEH12 8A	Install and test microwave antennae and waveguides	UEENEEH02 8B	Install microwave and antennae and waveguides	E
UEENEEH12 9B	Fault find and repair navigation systems	UEENEEH02 9B	Diagnose and rectify faults in navigation systems	E
UEENEEH13 0A	Fault find and repair satellite-based surveillance and observation systems	UEENEEH03 0B	Diagnose and rectify faults in satellite-based surveillance and observation systems	E
UEENEEH13 1A	Fault find and repair radar apparatus and systems	UEENEEH03 1B	Diagnose and rectify faults in radar apparatus and systems	E
UEENEEH13 2A	Fault find and repair global positioning systems	UEENEEH03 2B	Diagnose and rectify faults in global positioning systems	E
UEENEEH13 3A	Fault find and repair telecommunication	UEENEEH03 3B	Diagnose and rectify faults in	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	apparatus and systems		telecommunication apparatus and systems	
UEENEEH13 4A	Fault find and repair electronic medical equipment	UEENEEH03 4B	Diagnose and rectify faults in electronic medical equipment	E
UEENEEH13 5A	Design custom electronic equipment installations	UEENEEH03 5B	Design custom electronic installations	E
UEENEEH13 6A	Design commercial video/audio installations	UEENEEH03 6B	Design commercial audio/video installations	E
UEENEEH13 7A	Program and commission commercial video/audio systems	UEENEEH03 7B	Program and commission commercial audio/video systems	E
UEENEEH13 8A	Fault find and repair complex power supplies	UEENEEH03 8B	Find and repair faults in complex power supplies	E
UEENEEH13 9A	Troubleshoot basic amplifier circuits	UEENEEH03 9B	Troubleshoot basic amplifiers	E
UEENEEH14 0A	Fault find and repair sonar apparatus and systems	UEENEEH04 0B	Diagnose and rectify faults in sonar apparatus and systems	E
UEENEEH14 1A	Manage computer systems/electronics projects	UEENEEH04 1B	Manage electronics/computer systems projects	E
UEENEEH14 2A	Solve oscillator problems	UEENEEH04 2B	Troubleshoot oscillators	E
	Removed	UEENEEH04 3B	Diagnose and rectify faults in digital subsystems of electronic controls	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	Removed	UEENEEH04 4B	Diagnose and rectify faults in analogue circuits and components in electronic control systems	
UEENEEH14 5A	Develop engineering solutions to analogue electronic problems	UEENEEH04 5B	Develop solutions to analogue electronic problems	E
UEENEEH14 6A	Solve fundamental electronic communications system problems	UEENEEH04 6B	Solve fundamental problems in electronic communications systems	E
UEENEEH14 7A	Assess electronic apparatus compliance	UEENEEH04 7B	Assess compliance of electronic apparatus	E
UEENEEH14 8A	Design and develop advanced digital systems	UEENEEH04 8B	Design and develop advanced digital systems	E
UEENEEH14 9A	Develop engineering solutions to audio electronic problems	UEENEEH04 9B	Develop solutions to audio electronic problems	E
UEENEEH15 0A	Assemble and set up basic security systems	UEENEEH05 0B	Assemble and set up basic wired and wireless security systems	E
UEENEEH15 1A	Install large security systems	UEENEEH05 1B	Install large wired and wireless security systems	E
UEENEEH15 2A	Enter instructions and test wired and wireless security systems	UEENEEH05 2B	Enter instructions and test basic wired and wireless security systems	E
UEENEEH15	Program and test	UEENEEH05	Program and test large wired and	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
3A	large security systems	3B	wireless security systems	
UEENEEH15 4A	Program and commission commercial security systems	UEENEEH05 4B	Program and commission commercial security alarm systems	E
UEENEEH15 5A	Program and commission commercial access control security systems	UEENEEH05 5B	Program and commission commercial security access control systems	E
UEENEEH15 6A	Program and commission commercial security closed circuit television systems	UEENEEH05 6B	Program and commission commercial security closed circuit television (CCTV) systems	E
UEENEEH15 7A	Develop basic plans for integrating security systems	UEENEEH05 7B	Develop basic integrated security systems plan	E
UEENEEH15 8A	Design integrated security systems	UEENEEH05 8B	Design integrated security systems for a single site	E
UEENEEH15 9A	Design integrated complex security systems for multiple sites	UEENEEH05 9B	Design integrated complex security systems	E
UEENEEH16 0A	Plan large electronic projects	UEENEEH06 0B	Plan electronic projects	E
UEENEEH16 1A	Install fire detection and warning system apparatus	UEENEEH06 1B	Position and terminate fire detection and warning system apparatus	E
UEENEEH16	Verify compliance	UEENEEH06	Verify compliance	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
2A	and functionality of fire protection system installations	2B	and functionality of fire protection installations	
UEENEEH16 3A	Enter and verify programs for fire protection systems	UEENEEH06 3B	Enter and verify programs in preparation for commissioning fire protection systems	E
UEENEEH16 4A	Commission large fire protection systems	UEENEEH06 4B	Commission commercial fire protection systems	E
UEENEEH16 5A	Troubleshoot fire protection systems	UEENEEH06 5B	Find and repair faults in fire protection systems	E
UEENEEH16 6A	Troubleshoot microcontroller based hardware systems	UEENEEH06 6B	Fault find Microcontroller based hardware	E
UEENEEH16 7A	Commission electronics and communications systems	UEENEEH06 7B	Commission electronics and communications systems	E
UEENEEH16 8A	Modify/redesign of electronics and communications systems	UEENEEH06 8B	Modify-redesign of electronics and communications system	E
UEENEEH16 9A	Solve problems in basic electronic circuits	UEENEEH06 9B	Solve problems in electronic circuits	E
	Removed	UEENEEH07 0B	Terminate and connect components, conductors, wiring and cables for electronic circuits	
UEENEEH17 1A	Troubleshoot faults in television receivers	UEENEEH07 1B	Find and repair faults in television receivers	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEH17 2A	Troubleshoot communication systems	UEENEEH07 2C	Find and repair faults in communication systems	E
UEENEEH17 3A	Troubleshoot professional audio reproduction components	UEENEEH07 3B	Find and repair faults in professional audio reproduction components	E
UEENEEH17 4A	Troubleshoot audio/video recording equipment	UEENEEH07 4B	Find and repair faults in audio/video recording equipment	E
UEENEEH17 5A	Troubleshooting in security system installations	UEENEEH07 5B	Find and rectify faults and malfunctions in security system installations	E
UEENEEH17 6A	Diagnose and rectify faults in electronic display circuits	UEENEEH07 6B	Diagnose and rectify faults in display circuits	E
UEENEEH17 7A	Diagnose and rectify faults in recording and replay equipment	UEENEEH07 7B	Diagnose and rectify faults in recording and replay apparatus	E
UEENEEH17 8A	Diagnose and rectify faults in camera circuits and equipment	UEENEEH07 8B	Diagnose and rectify faults in camera circuits	E
UEENEEH17 9A	Diagnose and rectify faults in digital television circuits and apparatus	UEENEEH07 9B	Diagnose and rectify faults in digital television apparatus	E
UEENEEH18 0A	Diagnose and rectify faults in digital transmission circuits and systems	UEENEEH08 0B	Diagnose and rectify faults in digital transmission systems	E
UEENEEH18 1A	Design electronic printed circuit boards	UEENEEH08 1B	Design printed circuit boards	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEH18 2A	Develop engineering solutions to RF amplifiers problems	UEENEEH08 2B	Develop solutions to RF amplifiers problems	E
UEENEEH18 3A	Analyse the performance of wireless-based electronic/communication systems	UEENEEH08 3B	Analyse the performance of wireless-based electronic systems	E
UEENEEH18 4A	Modify digital signal processing (DSP) based sub-systems	UEENEEH08 4B	Modify DSP based sub-systems	E
UEENEEH18 5A	Design signal-conditioning subsystems	UEENEEH08 5B	Design a signal-conditioning subsystem	E
UEENEEH18 6A	Commission satellite and microwave communication systems	UEENEEH08 6B	Commission microwave and satellite communication systems	E
UEENEEH18 7A	Solve problems in electronic musical equipment circuits	UEENEEH08 7B	Solve problems in musical equipment circuits	E
UEENEEH18 8A	Design and develop electronics/ computer systems projects	UEENEEH08 8B	Design and develop electronics/computer systems project	E
UEENEEH19 0A	Provide engineering solutions to air traffic control system problems	UEENEEH09 0A	Provide solutions to air traffic control system problems	E
UEENEEH19 1A	Diagnose and rectify faults in air navigation circuits and systems	UEENEEH09 1A	Diagnose and rectify faults in air navigation systems	E
UEENEEH19	Develop solutions for air surveillance	UEENEEH09	Develop engineering solutions for air	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
2A	apparatus and systems	2A	surveillance apparatus and systems	
UEENEEH18 9A	Provide Gate Array solutions for complex electronics systems		New Unit	

I – Instrumentation and control units

	Removed	UEENEEI001 B	Install and set up transducers and sensing devices	
UEENEEI102 A	Solve problems in pressure measurement components and systems	UEENEEI002 B	Solve problems in pressure measurement systems	E
UEENEEI103 A	Solve problems in density/level measurement components and systems	UEENEEI003 B	Solve problems in density/level measurement systems	E
UEENEEI104 A	Solve problems in flow measurement components and systems	UEENEEI004 B	Solve problems in flow measurement systems	E
UEENEEI105 A	Solve problems in temperature measurement components and systems	UEENEEI005 B	Solve problems in temperature measurement systems	E
UEENEEI106 A	Set up and adjust PID control loops	UEENEEI006 B	Solve problems in process controllers, transmitters and converters	E
UEENEEI107 A	Install instrumentation and	UEENEEI007 C	Install process instrumentation and	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	control cabling and tubing		control cabling and tubing	
UEENEEI108 A	Install instrumentation and control apparatus and associated equipment	UEENEEI008 C	Install process control apparatus and associated equipment	E
UEENEEI118 A and UEENEEI131 A UEENEEI132 A UEENEEI133 A	Set up weighting measuring and control instruments Set up gas analysis measuring and control instruments Set up water analysis measuring and control instruments Set up scientific analysis measuring and control instruments	UEENEEI009 B	Set up process measuring and control instruments	E
UEENEEI110 A	Set up and adjust advanced PID process control loops	UEENEEI010 B	Set up and adjust process control loops	E
UEENEEI111 A	Find and rectify faults in process final control elements	UEENEEI011 B	Find and rectify faults in process control valve and associated equipment	E
UEENEEI112 A	Verify compliance and functionality of instrumentation and control installations	UEENEEI012 B	Verify compliance and functionality of process control installations	E
UEENEEI113 A	Setup and configure Human-Machine Interface (HMI) and industrial networks	UEENEEI013 B	Select equipment for process control systems	E
UEENEEI114 A	Trouble shoot process control systems	UEENEEI014 B	Find and rectify faults in process control	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
			systems	
UEENEEI115 A	Trouble shooting in medical equipment control systems	UEENEEI015 B	Find and rectify faults in medical equipment control systems	E
UEENEEI117 A	Calibrate, adjust and test measuring instruments	UEENEEI017 B	Calibrate and test measuring instruments	E
UEENEEI119 A	Set up industrial field control devices	UEENEEI019 B	Set up field control devices	E
UEENEEI120 A	Provide solutions to problems in industrial control systems	UEENEEI020 B	Provide solutions to problems in basic industrial control systems	E
UEENEEI121 A	Trouble shoot in measuring and analysis systems	UEENEEI021 B	Find and repair faults in measuring and analysis systems	E
UEENEEI122 A	Assist in commissioning process and instrumentation control systems	UEENEEI022 B	Assist in commissioning process control systems	E
UEENEEI123 A	Design electronic control systems	UEENEEI023 B	Design electronic control systems	E
UEENEEI125 A	Provide solutions to fluid circuit operations	UEENEEI025 B	Provide solutions to fluid circuit operations	E
UEENEEI126 A	Provide solutions to pneumatic/ hydraulic system operations	UEENEEI026 B	Provide solutions to pneumatic/hydraulic system operations	E
UEENEEI127 A	Analyse complex electronic circuits controlling fluids	UEENEEI027 B	Analyse complex electronic circuits controlling fluids	E
UEENEEI128	Set up and configure	UEENEEI028	Set up controls on	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
A	controls on complex fluid systems	B	complex fluid systems	
UEENEEI129 A	Set up electronically controlled mechanically operated complex systems	UEENEEI029 B	Set up electronically controlled mechanically operated complex systems	E
UEENEEI130 A	Set up electronically controlled robotically operated complex systems	UEENEEI030 B	Set up electronically controlled robotically operated complex systems	E
UEENEEI131 A UEENEEI132 A UEENEEI133 A and UEENEEI118 A	Set up gas analysis measuring and control instruments Set up water analysis measuring and control instruments Set up scientific analysis measuring and control instruments Set up weighting measuring and control instruments	UEENEEI009 B	Set up process measuring and control instruments	E
UEENEEI134 A	Manage instrumentation and control projects	UEENEEI034 B	Manage control projects	E
UEENEEI135 A	Plan instrumentation and control projects	UEENEEI035 B	Plan control projects	E
UEENEEI136 A	Manage automated control systems projects	UEENEEI036 B	Manage automated systems projects	E
UEENEEI137 A	Plan automated and control systems projects	UEENEEI037 B	Plan automated systems projects	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEI138 A	Provide solutions to extra low voltage (ELV) electro-pneumatic control systems and drives	UEENEEI038 A	Provide solutions to ELV electro-pneumatic control systems and drives	E
UEENEEI140 A	Plan the electrical installation of integrated systems	UEENEEI040 A	Plan the installation of integrated systems	E
UEENEEI141 A	Develop electrical integrated systems	UEENEEI041 A	Develop integrated systems	E
UEENEEI142 A	Develop an electrical integrated system interface for access through a touch screen	UEENEEI042 A	Develop an integrated system interface for access through a touch screen	E
UEENEEI143 A	Develop access control of electrical integrated systems using logic-based programming tools	UEENEEI043 A	Develop access control of integrated systems using logic-based programming tools	E
UEENEEI144 A	Develop interfaces for multiple access methods to monitor, schedule and control an electrical integrated system	UEENEEI044 A	Develop interfaces for multiple access methods to monitor, schedule and control an integrated system	E
UEENEEI101 A	Use instrumentation drawings, specification, standards and equipment manuals		New Unit	
UEENEEI116 A	Assemble, enter and verify operating instructions in microprocessor equipped devices		New Unit	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEI124 A	Fault find and repair analogue circuits and components in electronic control systems		New Unit	
UEENEEI139 A	Diagnose and rectify faults in digital controls systems		New Unit	
UEENEEI145 A	Diagnose and rectify faults in a.c. motor drive systems		New Unit	
UEENEEI146 A	Diagnose and rectify faults in d.c. motor drive systems		New Unit	
UEENEEI147 A	Diagnose and rectify faults in servo drive systems		New Unit	
UEENEEI148 A	Solve problems in single phase electronic power control circuits		New Unit	
UEENEEI149 A	Solve problems in polyphase electronic power control circuits		New Unit	
UEENEEI150 A	Develop, enter and verify discrete control programs for programmable controllers		New Unit	
UEENEEI151 A	Develop, enter and verify word and analogue control programs for programmable logic controllers.		New Unit	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEI152 A	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems		New Unit	
UEENEEI153 A	Design and configure Human-Machine Interface (HMI) networks		New Unit	
UEENEEI154 A	Design and use advanced programming tools PC networks and HMI Iinterfacing		New Unit	
UEENEEI155 A	Develop structured programs to control external devices		New Unit	
UEENEEI156 A	Develop and test code for microcontroller devices		New Unit	
UEENEEI157 A	Configure and maintain industrial control system networks		New Unit	

J – Refrigeration and Air Conditioning units

	Removed	UEENEEJ002 B	Prepare refrigerant tubing and fittings	
	Removed	UEENEEJ003 B	Determine the basic operating conditions of vapour compression systems	
	Removed	UEENEEJ004 B	Determine the basic operating conditions of air conditioning	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
			systems	
	Removed	UEENEEJ005 B	Position, assemble and start up split air conditioning systems	
	Removed	UEENEEJ006 B	Install pipework for refrigeration and air conditioning systems	
	Removed	UEENEEJ007 B	Install refrigeration and air conditioning systems, major components and associated equipment	
	Removed	UEENEEJ008 B	Recover, pressure and leak test, evacuate and charge refrigerants	
	Removed	UEENEEJ009 B	Verify compliance and functionality of refrigeration and air conditioning installations	
	Removed	UEENEEJ010 B	Select refrigerant pipe/tube, accessories and associated controls	
	Removed	UEENEEJ011 B	Diagnose and rectify faults in refrigeration and air conditioning systems and components	
	Removed	UEENEEJ013 B	Commission refrigeration and air conditioning systems	
	Removed	UEENEEJ015 B	Solve problems in beverage dispensers	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	Removed	UEENEEJ018 B	Solve problems in post mix refrigeration systems	
	Removed	UEENEEJ019 B	Solve problems in ice making systems	
	Removed	UEENEEJ020 B	Solve problems in industrial refrigeration systems	
	Removed	UEENEEJ021 B	Monitor and adjust energy management systems on refrigeration systems	
	Removed	UEENEEJ053 B	Find and rectify faults in appliance motors and associated controls	
	Removed	UEENEEJ067 B	Solve problems in central plant air conditioning systems	
	Removed	UEENEEJ070 B	Diagnose and rectify faults in refrigeration and air conditioning control systems	
	Removed	UEENEEJ072 B	Recover, pressure and leak test, evacuate and charge refrigerants – split air conditioning systems	
UEENEEJ120 A	Resolve problems in industrial refrigeration systems		New Unit	
K – Renewable/Sustainable Energy				
UEENEEK10	Maintain safety and tidiness of remote	UEENEEK00	Maintain safety and tidiness of remote	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
1A	area power supply systems	1B	area power supply (RAPS) systems	
UEENEEK10 2A	Work safely with remote area power supply systems	UEENEEK00 2B	Work safely with remote area power supply (RAPS) systems	E
UEENEEK10 3A	Conduct periodic maintenance of remote area power supply battery banks	UEENEEK00 3B	Conduct periodic maintenance of remote area power supply (RAPS) battery banks	E
UEENEEK10 4A	Conduct periodic maintenance of remote area power supply generator sets	UEENEEK00 4B	Conduct periodic maintenance of remote area power supply (RAPS) generator sets	E
UEENEEK10 5A	Conduct periodic maintenance of remote area power supply photo voltaic arrays	UEENEEK00 5B	Conduct periodic maintenance of remote area power supply (RAPS) photo voltaic arrays	E
UEENEEK10 6A	Conduct periodic maintenance of remote area power supply wind generators	UEENEEK00 6B	Conduct periodic maintenance of remote area power supply (RAPS) wind generators	E
UEENEEK10 7A	Conduct checks in the demand side use of remote area power supplies (RAPS)	UEENEEK00 7B	Conduct checks in the demand side use of remote area power supplies	E
UEENEEK10 8A	Plan periodic maintenance schedules of remote area power supplies (RAPS)	UEENEEK00 8B	Plan periodic maintenance schedules of remote area power supplies	E
UEENEEK10	Attend to breakdowns	UEENEEK00	Attend to breakdowns	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
9A	in remote area power supplies (RAPS)	9B	in remote area power supplies	
UEENEEK11 0A	Co-ordinate maintenance of renewable energy (RE) apparatus and systems	UEENEEK01 0B	Coordinate maintenance of renewable energy apparatus and systems	E
UEENEEK11 1A	Assemble and connect remote area power supplies	UEENEEK01 1B	Assemble and connect remote area power supplies (RAPS)	E
UEENEEK11 2A	Provide basic sustainable energy solutions for energy reduction in residential premises	UEENEEK01 2B	Provide basic sustainable energy solutions for energy reduction in domestic premises	E
	Removed	UEENEEK01 3B	Apply sustainable energy practice in daily activities	
UEENEEK11 4A	Promote sustainable energy practices in the community	UEENEEK01 4B	Promote sustainable energy practice in the community	E
UEENEEK11 6A	Maintain and repair remote area power generation facilities	UEENEEK01 6A	Maintain and repair remote area power generation facilities	E
UEENEEK11 7A	Maintain and repair facilities associated with remote area essential service operations	UEENEEK01 7B	Maintain and repair facilities associated with remote area essential services operation	E
UEENEEK12 0A	Maintain operation of remote area power generation plant	UEENEEK02 0B	Maintain operation of remote area power plant	E
UEENEEK12 1A	Manage renewable energy (RE) projects	UEENEEK02 1B	Manage renewable energy projects	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEK12 2A	Plan renewable energy (RE) projects	UEENEEK02 2B	Plan renewable energy projects	E
UEENEEK12 3A	Carry out basic repairs to renewable energy apparatus	UEENEEK02 3B	Carry out basic repairs to renewable energy apparatus by replacement of components	E
UEENEEK12 5A	Solve basic problems in photovoltaic energy apparatus and systems	UEENEEK02 5C	Solve basic problems in photovoltaic energy apparatus	E
	Removed	UEENEEK02 6B	Install and set up grid connected photovoltaic power systems	
UEENEEK12 7A	Diagnose and rectify faults in renewable energy control systems	UEENEEK02 7B	Diagnose faults in renewable energy control systems	E
UEENEEK12 8A	Solve problems in stand-alone renewable energy systems	UEENEEK02 8B	Solve problems in stand-alone renewable energy systems	E
UEENEEK12 9A	Design renewable energy (RE) heating systems	UEENEEK02 9B	Design renewable energy heating systems	E
UEENEEK13 0A	Solve problems in wind energy conversion systems rated up to 10 kW	UEENEEK03 0B	Solve problems in wind energy conversion systems	E
UEENEEK13 1A	Design wind energy conversion systems (WECS) rated to 10 kW	UEENEEK03 1B	Design wind energy conversion systems rated to 10 kW	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEK13 2A	Develop strategies to address environmental and sustainability issues in the energy sector	UEENEEK03 2B	Develop strategies to address sustainability issues	E
UEENEEK13 3A	Design hybrid renewable power systems	UEENEEK03 3B	Design set up hybrid power systems	E
UEENEEK13 4A	Install ELV stand-alone photovoltaic power systems	UEENEEK03 4B	Install standalone photovoltaic power systems	E
UEENEEK13 5A	Design grid connected photovoltaic power supply systems	UEENEEK03 5C	Design grid connected power supply systems	E
UEENEEK13 6A	Install, configure and commission LV micro-hydro systems rated up to 6.4 kW	UEENEEK03 6B	Prepare grid connected photovoltaic power systems for LV connection	E
UEENEEK13 7A	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW	UEENEEK03 7B	Install and set up micro-hydro systems	E
UEENEEK13 8A	Design micro-hydro systems rated to 6.4 kW	UEENEEK03 8B	Design micro-hydro systems	E
UEENEEK13 9A	Design stand-alone renewable energy (RE) systems	UEENEEK03 9B	Design stand-alone renewable energy systems	E
UEENEEK14 0A	Develop engineering solutions to renewable energy (RE) problems	UEENEEK04 0B	Develop engineering solution to renewable energy problems	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEEK14 2A	Apply environmentally and sustainable energy procedures in the energy sector	UEENEEK04 2A	Participate in environmentally sustainable work practices	E
UEENEEK14 3A	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications	UEENEEK04 3A	Install small wind energy conversion systems for stand-alone applications	E
UEENEEK14 5A	Implement and monitor energy sector environmental and sustainable energy policies and procedures	UEENEEK04 5A	Implement & monitor, policies & procedures for environmentally sustainable electrotech work practice	E
UEENEEK14 6A	Design energy management controls for electrical installations in buildings	UEENEEK04 6A	Design energy management controls for electrical installations in buildings	E
	Removed	UEENEEK04 7A	Maintain and monitor remote area essential service operations	
UEENEEK14 8A	Install, configure and commission LV grid connected photovoltaic power systems	UEENEEK04 8A	Install, configure and commission grid connected photovoltaic power systems	E
UEENEEK14 9A	Verify compliance and functionality of a extra low voltage renewable energy installation	UEENEEK04 9A	Verify compliance and functionality of a renewable energy installation	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	Removed	UEENEEK05 0A	Assemble and set up photovoltaic apparatus in a domestic dwelling	
UEENEEK15 1A	Develop effective engineering strategies for energy reduction in buildings	UEENEEK05 1A	Develop effective strategies for energy reduction in buildings	E
UEENEEK11 8A	Maintain and monitor remote area essential service (RAPS) operations		New Unit	
UEENEEK12 4A	Solve basic problems in micro hydro systems		New Unit	
UEENEEK14 4A	Install, configure and commission LV wind energy conversion systems rated up to 10 kW		New Unit	
UEENEEK15 2A	Develop strategies to address sustainability issues for electrical installations		New Unit	
UEENEEK15 3A	Assess energy loads and uses for energy efficiency in residential, office and retail premises		New Unit	
UEENEEK15 4A	Assess energy loads and uses for energy efficiency in commercial facilities		New Unit	
UEENEEK15 5A	Assess energy loads and uses for energy efficiency in		New Unit	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	industrial properties and enterprises			

N – Rail signalling units

UEENEEN10 1A	Maintain mechanical rail signalling equipment and infrastructure	UEENEEN00 1B	Service mechanical signalling equipment and infrastructure	E
UEENEEN10 2A	Assemble and wire internal electrical rail signalling equipment	UEENEEN00 2B	Assemble and wire internal electrical signalling equipment	E
UEENEEN10 3A	Install and maintain rail track circuit leads and bonds	UEENEEN00 3B	Install and maintain track circuit leads and bonds	E
UEENEEN10 4A	Test copper rail signalling cables	UEENEEN00 4B	Perform cable tests	E
UEENEEN10 5A	Install and maintain rail signalling power supplies	UEENEEN00 5B	Install and maintain signalling power supplies	E
UEENEEN10 6A	Install and maintain non-vital screen based control systems	UEENEEN00 6B	Maintain remote control and non-vital interlocking control systems	E
UEENEEN10 7A	Install and maintain active level crossing equipment	UEENEEN00 7B	Maintain power signalling and protected level crossing equipment	E
UEENEEN10 8A	Install and maintain power operated point actuating devices	UEENEEN00 8B	Maintain on-site power operated point-activating devices	E
UEENEEN10 9A	Install and maintain train detection equipment	UEENEEN00 9B	Maintain track circuit equipment	E
UEENEEN11	Install and maintain	UEENEEN01	Maintain electronic	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
0A	non-vital telemetry systems	0B	signalling and communication equipment	
UEENEEN11 1A	Install and maintain trackside signal and train protection equipment	UEENEEN01 1B	Install and maintain power operated signalling equipment	E
UEENEEN11 2A	Install and maintain vital relay interlocking systems	UEENEEN01 2B	Maintain power signalling and protective relay interlocking systems	E
	Removed	UEENEEN01 3B	Install and test computer based interlocking equipment	
UEENEEN11 4A	Install and maintain computer based interlocking rail systems	UEENEEN01 4B	Maintain computer based and solid state interlocking systems	E
	Removed	UEENEEN01 5B	Conduct routine inspecting and testing of new signal cables and lines	
UEENEEN11 6A	Maintain electronic and microprocessor-based remote control systems	UEENEEN01 6B	Maintain electronic switched and microprocessor-based remote control systems	E
	Removed	UEENEEN01 7B	Install and maintain transmission interface equipment	
UEENEEN11 8A	Find and repair rail signalling system faults	UEENEEN01 8B	Find and repair wiring system faults	E
	Removed	UEENEEN01	Test equipment and	

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
		9B	isolate faults	
	Removed	UEENEEN02 0B	Install electrical power and control equipment for rail networks	
UEENEEN12 1A	Repair rail signalling power and control cables	UEENEEN02 1A	Repair rail signalling cables	E
	Removed	UEENEEN02 5B	Coordinate and manage track protection	
UEENEEN12 6A	Develop rail signalling system maintenance programs	UEENEEN02 6B	Develop rail signalling maintenance programs	E
UEENEEN12 7A	Decommission electrical and electro-mechanical rail signalling from service	UEENEEN02 7B	Decommission electrical and electro-mechanical signalling from service	E
UEENEEN12 8A	Test and commission rail power equipment	UEENEEN02 8B	Test and commission power signalling equipment	E

P – Restricted and specialist electrical work units

UEENEEN010 A	Disconnect / reconnect appliances connected to low voltage installation wiring	UEENEEN001 B	Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply (Endorsement for Appliances)	E
UEENEEN011 A	Disconnect / reconnect neon signs connected to low voltage installation	UEENEEN001 B	Disconnect and reconnect fixed wired electrical equipment connected to a Low	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
	wiring		Voltage supply (Endorsement for Neon Signs)	
UEENEPP013 A	Disconnect / reconnect control devices connected to low voltage installation wiring	UEENEPP001 B	Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply (Endorsement for Control Devices)	E
UEENEPP014 A	Disconnect / reconnect water heaters connected to low voltage installation wiring	UEENEPP001 B	Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply (Endorsement for Water Heaters)	E
UEENEPP015 A	Disconnect / reconnect motors connected to low voltage installation wiring	UEENEPP001 B	Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply (Endorsement for Motors)	E
UEENEPP024 A	Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply	UEENEPP002 B	Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply	E
UEENEPP025 A	Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. supply	UEENEPP003 B	Attach cords and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. supply	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
UEENEPP021 A	Disconnect / reconnect explosion-protected appliances and control devices connected to low voltage installation wiring	UEENEPP004 B	Disconnect and reconnect explosion-protected electrical equipment connected to Low Voltage supply	E
UEENEPP022 A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles	UEENEPP005 B	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles	E
UEENEPP023 A	Attach flexible cables and plugs to electrical equipment connected to a HV supply	UEENEPP006 B	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply	E
UEENEPP016 A	Locate and rectify faults in low voltage appliances using set procedures	UEENEPP007 B	Locate and rectify faults in electrical low voltage equipment following prescribed procedures (Endorsement for Appliances)	E
UEENEPP018 A	Locate and rectify faults in low voltage control devices using set procedures	UEENEPP007 B	Locate and rectify faults in electrical low voltage equipment following prescribed procedures (Endorsement for Control Devices)	E
UEENEPP019 A	Locate and rectify faults in low voltage water heaters using set procedures	UEENEPP007 B	Locate and rectify faults in electrical low voltage equipment following prescribed procedures (Endorsement for	E

Code in UEE11 V1	Qualification Title in UEE11 V1	Code in UEE07 V4	Qualification Title in UEE07 V4	E = Equivalent N= Not Equivalent
			Water Heaters)	
UEENEPP020 A	Locate and rectify faults in low voltage motors using set procedures	UEENEPP007 B	Locate and rectify faults in electrical low voltage equipment following prescribed procedures (Endorsement for Motors)	E
UEENEPP026 A	Conduct in-service safety testing of electrical cord connected equipment and cord assemblies	UEENEPP008 B	Conduct in-service safety testing of electrical cord assemblies and cord connected equipment	E

Rationalised Units

Table 2 The units from UEE07 Version 4 listed below have been replaced by imported units from the UET11 ESI –Transmission Distribution and Rail Training Package.

Imported Unit Code	Imported Unit Title	UEE07 V4 Code	UEE07 V4 Unit Title	Equivalent Not Equivalent
UETTDRIS74 A	Develop engineering solutions for energy supply system protection problems	UEENEPEG046 B	Develop engineering solutions for energy supply system protection problems	E
UETTDRIS73 A	Develop engineering solutions for energy supply power transformer problems	UEENEPEG040 B	Develop engineering solutions for energy supply power transformer problems	E
UETTDRIS72 A	Diagnose and rectify faults in distributed Generation systems	UEENEPEG039 B	Diagnose and rectify faults in distributed generation systems	E
UETTDRIS71 A	Diagnose and rectify faults in electrical energy supply transmission systems	UEENEPEG042 B	Diagnose and rectify faults in electrical energy supply transmission systems	E
UETTDRIS70	Diagnose and rectify faults in electrical energy	UEENEPEG038	Diagnose and rectify faults in electrical energy	E

A	distribution systems	B	distribution systems	
UETTDRIS69 A	Diagnose and rectify faults in energy supply apparatus	UEENEEG037 B	Diagnose and rectify faults in energy supply apparatus	E
UETTDRIS68 A	Solve problems in energy supply network protection equipment and systems	UEENEEG015 B	Find and rectify faults in energy supply network equipment	E
UETTDRIS67 A	Solve problems in energy supply network equipment	UEENEEG015 B	Find and rectify faults in energy supply network equipment	E
UETTDRIS44 A	Perform HV field switching operation to a given schedule	UEENEEG034 B	Perform high voltage field switching to a given schedule	E

Table 2 – Relationship of UEE07 Electrotechnology Training Package CSUs Version 4 to UEE07 Electrotechnology Training Package CSUs Version 3.1

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
UEENEEE011C	Manage risk in electrotechnology activities	UEENEE011B	Manage risk in electrotechnology activities
UEENEEE080A	Apply industry and community standards to engineering activities		New Unit
UEENEEE081A	Apply material science to solving electrotechnology engineering problems		New Unit
UEENEEE082A	Apply physics to solving electrotechnology engineering problems		New Unit
UEENEEE083A	Establish and follow a competency development plan in an electrotechnology engineering discipline		New Unit
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace		New Unit
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components		New Unit

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
UEENEEE104A	Solve problems in d.c. circuits		New Unit
UEENEEE105A	Fix and secure electrotechnology equipment		New Unit
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications		New Unit
UEENEEE125A	Provide engineering solutions for problems in complex multiple path circuits		New Unit
UEENEEE126A	Provide solutions to basic engineering computational problems		New Unit
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work		New Unit
UEENEEO006A	Solve problems in single and three phase low voltage machines		New Unit
UEENEEO033A	Solve problems in single and three phase low voltage electrical apparatus and circuits		New Unit
UEENEEO063A	Arrange circuits, control and protection for general electrical installations		New Unit
UEENEEO076A	Install and replace low voltage current transformer metering		New Unit
UEENEEO101A	Solve problems in electromagnetic devices and related circuits		New Unit
UEENEEO102A	Solve problems in low voltage a.c. circuits		New Unit
UEENEEO103A	Install low voltage wiring and accessories		New Unit
UEENEEO104A	Install appliances, switchgear and associated accessories for low voltage electrical installations		New Unit
UEENEEO105A	Verify compliance and functionality of		New Unit

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
	low voltage general electrical installations		
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits		New Unit
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations		New Unit
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits		New Unit
UEENEEG109A	Develop and connect electrical control circuits		New Unit
UEENEEG149A	Provide engineering solutions to problems in complex polyphase power circuits		New Unit
UEENEEG171A	Install, set up and commission interval metering		New Unit
UEENEEH091A	Diagnose and rectify faults in air navigation systems		New Unit
UEENEEH092A	Develop engineering solutions for air surveillance apparatus and systems		New Unit
UEENEEI038A	Provide solutions to ELV electro-pneumatic control systems and drives		New Unit
UEENEEI040A	Plan the installation of integrated systems		New Unit
UEENEEI041A	Develop integrated systems		New Unit
UEENEEI042A	Develop an integrated system interface for access through a touch screen		New Unit
UEENEEI043A	Develop access control of integrated systems using logic-based programming tools		New Unit
UEENEEI044A	Develop interfaces for multiple access methods to monitor, schedule and control an integrated system		New Unit

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
UEENEEJ102A	Prepare and connect refrigerant tubing and fittings		New Unit
UEENEEJ103A	Establish the basic operating conditions of vapour compression systems		New Unit
UEENEEJ104A	Establish the basic operating conditions of air conditioning systems		New Unit
UEENEEJ105A	Position, assemble and start up single head split air conditioning and water heating heat pump systems		New Unit
UEENEEJ106A	Install refrigerant pipe work, flow controls and accessories		New Unit
UEENEEJ107A	Install air conditioning and refrigeration systems, major components and associated equipment		New Unit
UEENEEJ108A	Recover, pressure test, evacuate, charge and leak test refrigerants		New Unit
UEENEEJ109A	Verify functionality and compliance of refrigeration and air conditioning installations		New Unit
UEENEEJ110A	Select refrigerant piping, accessories and associated controls		New Unit
UEENEEJ111A	Diagnose and rectify faults in air conditioning and refrigeration systems and components		New Unit
UEENEEJ112A	Diagnose and rectify faults in complex air conditioning/refrigeration systems	UEENEEJ012B	Diagnose and rectify faults in complex air conditioning/refrigeration systems
UEENEEJ113A	Commission air conditioning and refrigeration systems		New Unit
UEENEEJ114A	Resolve problems in hydronic systems	UEENEEJ014B	Solve problems in hydronic systems
UEENEEJ115A	Resolve problems in beverage dispensers		New Unit
UEENEEJ116A	Resolve problems in transport	UEENEEJ016B	Solve problems in transport

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
	refrigeration systems		refrigeration systems
UEENEEJ117A	Resolve problems in ultra-low temperature refrigeration systems	UEENEEJ017B	Solve problems in ultra-low temperature refrigeration
UEENEEJ118A	Resolve problems in post mix refrigeration systems		New Unit
UEENEEJ119A	Resolve problems in ice making systems		New Unit
UEENEEJ121A	Monitor and adjust refrigeration energy management systems		New Unit
UEENEEJ122A	Diagnose faults in complex HVAC /refrigeration control systems	UEENEEJ022B	Diagnose faults in complex refrigeration or HVAC control systems
UEENEEJ123A	Commission complex (HVAC) heating, ventilation and air conditioning systems	UEENEEJ023B	Commission complex heating, ventilation and air conditioning (HVAC) systems
UEENEEJ124A	Commission refrigeration/air conditioning hydronic systems	UEENEEJ024B	Commission hydronic systems for refrigeration and/or air conditioning
UEENEEJ125A	Commission complex refrigeration systems and equipment	UEENEEJ025B	Commission complex refrigeration systems
UEENEEJ126A	Commission complex refrigeration/air conditioning control systems	UEENEEJ026B	Commission complex control systems for refrigeration/air conditioning
UEENEEJ127A	Establish the thermodynamic parameters of refrigeration and air conditioning systems	UEENEEJ027B	Determine thermodynamic parameters of refrigeration and air conditioning systems
UEENEEJ128A	Produce HVAC/R system design drawings	UEENEEJ028B	Produce HVAC/R design drawings
UEENEEJ129A	Establish heat loads for commercial refrigeration and air conditioning applications	UEENEEJ029B	Determine the heat loads for commercial refrigeration and air conditioning applications
UEENEEJ130A	Produce HVAC/R control system diagrams	UEENEEJ030B	Produce HVAC/R control system design diagrams
UEENEEJ131A	Determine noise and vibration encountered in HVAC/R applications	UEENEEJ031B	Provide solutions to vibration and noise problems in HVAC/R systems

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
UEENEEJ132A	Design commercial refrigeration systems and select components	UEENEEJ032B	Design commercial refrigeration systems
UEENEEJ133A	Design industrial refrigeration systems and select components	UEENEEJ033B	Design industrial refrigeration systems
UEENEEJ134A	Design heating, ventilation and air conditioning (HVAC) systems and select components	UEENEEJ034B	Design heating, ventilation and air conditioning (HVAC) systems
UEENEEJ135A	Design control systems for refrigeration or heating, ventilation and air conditioning systems	UEENEEJ035B	Design control systems for refrigeration, heating, ventilation, air conditioning and refrigeration system
UEENEEJ136A	Evaluate and report on building services energy management systems	UEENEEJ036B	Evaluate and report on building services energy management
UEENEEJ137A	Evaluate and report on the indoor air quality of buildings	UEENEEJ037B	Evaluate and report on the indoor air quality of buildings
UEENEEJ138A	Analyse vibration and noise in refrigeration and air conditioning systems	UEENEEJ038B	Analyse noise and vibration in refrigeration and air conditioning systems
UEENEEJ139A	Develop specifications and prepare drawings for HVAC/Refrigeration projects	UEENEEJ039B	Develop specifications and prepare drawings for HVAC/R projects
UEENEEJ141A	Design complex commercial refrigeration systems and select equipment	UEENEEJ041B	Design complex commercial refrigeration systems
UEENEEJ142A	Design complex industrial refrigeration systems and select equipment	UEENEEJ042B	Design complex industrial refrigeration systems
UEENEEJ143A	Design complex air conditioning systems and select equipment	UEENEEJ043B	Design complex air conditioning systems
UEENEEJ144A	Design mechanical ventilation/exhaust systems and select equipment	UEENEEJ044B	Design mechanical ventilation/exhaust systems
UEENEEJ145A	Design hydronic systems and select equipment	UEENEEJ045B	Design hydronic systems
UEENEEJ146A	Design complex control systems for refrigeration, heating ventilation or air conditioning systems	UEENEEJ046B	Design complex control systems for refrigeration, heating, ventilation, air conditioning and refrigeration systems

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
	conditioning systems		refrigeration systems
UEENEEJ147A	Audit energy use for commercial HVAC/Refrigeration systems	UEENEEJ047B	Audit energy use for commercial HVAC/R systems
UEENEEJ148A	Audit HVAC/R control systems for compliance with regulations and standards	UEENEEJ048B	Audit HVAC/R control systems for compliance with standards and regulations
UEENEEJ149A	Develop heat exchanger design specifications	UEENEEJ049B	Develop specifications for heat exchanger designs
UEENEEJ150A	Evaluate new and alternative technologies applicable to electrotechnology applications	UEENEEJ050B	Evaluate alternative and new technologies applicable to electrotechnology applications
UEENEEJ151A	Service small electrical appliances and power tools	UEENEEJ051B	Service small appliances and power tools
	Deleted	UEENEEJ052B	Carry out repairs to appliances and refrigeration systems
UEENEEJ153A	Find and rectify faults in motors and associated controls in refrigeration and air conditioning systems		New Unit
UEENEEJ154A	Find and rectify faults in appliance control systems and devices	UEENEEJ054B	Find and rectify faults in appliance control devices and systems
UEENEEJ155A	Service refrigeration appliances	UEENEEJ055B	Service refrigerated appliances
UEENEEJ156A	Service clothes washing machines and dryers	UEENEEJ056B	Service clothes washers and dryers
UEENEEJ157A	Service electrical heating appliances	UEENEEJ057B	Service electric heating appliances
UEENEEJ158A	Service dishwasher machines	UEENEEJ058B	Service dish washing machines
UEENEEJ159A	Service gas heating appliances	UEENEEJ059B	Service gas appliances
UEENEEJ161A	Verify functionality and compliance of appliances	UEENEEJ061B	Verify compliance and functionality of appliances
UEENEEJ162A	Recover, pressure test, evacuate, charge and leak test refrigerants — appliances	UEENEEJ062B	Recover, pressure and leak test, evacuate and charge refrigerants in appliances

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
	Deleted	UEENEEJ063B	Analyse the psychrometric and thermodynamic performance of HVAC/R systems
UEENEEJ164A	Analyse the operation of HVAC air and hydronic systems	UEENEEJ064B	Analyse the operation of HVAC systems
UEENEEJ165A	Evaluate thermodynamic and fluid parameters of refrigeration systems	UEENEEJ065B	Evaluate fluid and thermodynamic parameters of refrigeration systems
UEENEEJ166A	Resolve problems in dairy refrigeration systems	UEENEEJ066B	Solve problems in dairy refrigeration systems
UEENEEJ167A	Resolve problems in central plant air conditioning systems		New Unit
UEENEEJ168A	Maintain microbial control of refrigeration and air conditioning systems	UEENEEJ068B	Maintain microbial control of water systems
UEENEEJ170A	Diagnose and rectify faults in air conditioning and refrigeration control systems		New Unit
UEENEEJ171A	Resolve problems in refrigerated beverage vending cabinets	UEENEEJ071B	Solve problems in refrigerated beverage vending cabinets
UEENEEJ172A	Recover, pressure test, evacuate, charge and leak test refrigerants — split systems	UEENEEJ072B	Recover, pressure and leak test, evacuate and charge refrigerants in air conditioning systems
UEENEEJ173A	Service and repair microwave ovens	UEENEEJ073B	Service microwave ovens
UEENEEJ174A	Apply safety awareness and legal requirements for hydrocarbon refrigerants	UEENEEJ074A	Safety awareness and legal requirements for hydrocarbon refrigerants
UEENEEJ175A	Service and repair self contained hydrocarbon air conditioning and refrigeration systems	UEENEEJ075A	Service and repair self contained hydrocarbon refrigeration and air conditioning systems
UEENEEJ176A	Install and commission hydrocarbon refrigeration systems, components and associated equipment	UEENEEJ076B	Install and commission hydrocarbon refrigeration systems, major components and associated equipment
UEENEEJ177A	Design hydrocarbon refrigerated	UEENEEJ077A	Design hydrocarbon refrigeration systems

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
	systems		systems
UEENEEJ178A	Apply safety awareness and legal requirements for ammonia refrigerant	UEENEEJ078A	Safety awareness in using a refrigerant
UEENEEJ179A	Repair and service ammonia refrigeration systems	UEENEEJ079A	Service and repair ammonia refrigeration systems
UEENEEJ180A	Install and commission ammonia refrigeration systems, components and associated equipment	UEENEEJ080A	Install and commission ammonia refrigeration systems
UEENEEJ181A	Design ammonia refrigerated systems	UEENEEJ081A	Design ammonia refrigerated systems
UEENEEJ182A	Repair and service secondary refrigeration systems	UEENEEJ082A	Service and repair secondary refrigeration systems
UEENEEJ183A	Design secondary refrigerant systems	UEENEEJ083A	Design secondary refrigerant systems
UEENEEJ184A	Apply safety awareness and legal requirements for carbon dioxide refrigerant	UEENEEJ084A	Safety awareness in using carbon dioxide as a refrigerant
UEENEEJ185A	Repair and service carbon dioxide refrigeration systems	UEENEEJ085A	Service and repair carbon dioxide refrigeration systems
UEENEEJ186A	Install and commission carbon dioxide refrigeration systems, components and associated equipment	UEENEEJ086A	Install and commission carbon dioxide refrigeration systems
UEENEEJ187A	Design carbon dioxide refrigerated systems	UEENEEJ087A	Design carbon dioxide refrigerated systems
UEENEEJ188A	Repair and service self contained carbon dioxide refrigeration and heat pump systems	UEENEEJ088A	Service and repair self contained carbon dioxide refrigeration and heat pump systems
UEENEEJ189A	Service room air conditioners	UEENEEJ089A	Room air conditioners service
UEENEEJ190A	Select basic commercial refrigeration system equipment, components and accessories	UEENEEJ090A	Select basic commercial refrigeration system equipment and components
UEENEEJ191A	Select residential air conditioning system equipment, components and accessories	UEENEEJ091A	Select residential air conditioning system equipment and components

UEE07 Unit Code – V4	UEE07 Unit Title – V4	UEE07 Unit Code – V3.1	UEE07 Unit Title – V3.1
	accessories		
UEENEEJ192A	Analyse the psychrometric performance of HVAC/R systems	UEENEEJ063B	Analyse the psychrometric and thermodynamic performance of HVAC/R systems
UEENEEJ193A	Analyse the thermodynamic performance of HVAC/R systems		
UEENEEJ194A	Solve problems in low voltage refrigeration circuits		New Unit
UEENEEJ195A	Establish the basic operating conditions of vapour compression systems - appliances		New Unit
UEENEEJ196A	Operate Ammonia Refrigeration Plant		New Unit
UEENEEN021A	Repair rail signalling cables		New Unit
	Deleted	UEENEEN009B	Locate and rectify faults in low voltage appliances up to 1000 V following prescribed procedures
UEENEEN012A	Disconnect / reconnect composite appliances connected to low voltage installation wiring		New Unit
UEENEEN017A	Locate and rectify faults in low voltage composite appliances using set procedures		New Unit
UEENEEN024A	Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply		New Unit
UEENEEN025A	Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. supply		New Unit

Table 4 Rationalised Rail Signalling Competencies from TLI07 Transport and Logistics Training Package

The table below maps the rationalised Rail Signalling Competencies from TLI07 Transport and Logistics Training Package transferred to EE-Oz Coverage.

By agreement between the two industry sectors selected Rail Signalling units were deleted from TLI07 and transferred to EE-Oz through importation into UEE07 Electrotechnology Training Package. Under this agreement EE-Oz is required to map these units to equivalent competencies in The Rail Signalling discipline of UEE07

This mapping should be used to provide RPL and Credit Transfer to candidates seeking recognition of competencies gained under the TLI07 Training Package.

Equivalent unit in UEE07 – V4		Unit deleted from TLI07 Transport and	
Code	Title	Code	Title
UEENEEN002B	Assemble and wire internal electrical signalling equipment	TLIB5907B	Assemble and wire internal electrical signalling equipment
UEENEEN003B	Install and maintain track circuit leads and bonds	TLIB6207B	Install and maintain track circuit leads and bonds
UEENEEN004B	Perform cable tests	TLIB5707B	Perform cable system tests
UEENEEN005B	Install and maintain signalling power supplies	TLIB6607B	Install and maintain signalling power supplies
UEENEEN006B	Maintain remote control and non-vital interlocking control systems	TLIB5007B	Maintain remote control and non-vital interlocking control systems
UEENEEN007B	Maintain power signalling and protected level crossing equipment	TLIB5107B	Maintain power signalling and protected level crossing equipment
UEENEEN008B	Maintain on site power operated point-activating devices	TLIB5207B	Maintain on-site power operated point-activating devices
UEENEEN009B	Maintain track circuit equipment	TLIB5407B	Install and maintain track circuit equipment
UEENEEN010B	Maintain electronic signalling and communication equipment	TLIB6307B	Maintain electronic signalling and communication systems
UEENEEN011B	Install and maintain power operated signalling equipment	TLIB6707B	Install and maintain power operated signalling equipment
UEENEEN012B	Maintain power signalling and protective relay interlocking systems	TLIB6907B	Maintain power signalling and protective relay interlocking systems
UEENEEN013B	Install and test computer based interlocking equipment	TLIS1107B	Install and test computer based interlocking equipment
UEENEEN014B	Maintain computer based and solid state	TLIB5507B	Maintain computer based and solid state

	interlocking systems		interlocking equipment
UEENEEN015B	Conduct routine inspecting and testing of new signal cables and lines	TLIB5607B	Conduct route testing of route
UEENEEN016B	Maintain electronic switched and microprocessor-based remote control systems	TLIB6407B	Maintain electronic switched microprocessor-based remote control systems
UEENEEN017B	Install and maintain transmission interface equipment	TLIB6507B	Install and maintain transmission interface equipment
UEENEEN028B	Test and commission power signalling equipment	TLIS1007B	Test and commission power signalling protected level crossing equipment

Table 5 – Relationship of UEE07 Electrotechnology Training Package CSUs Version 3 to UEE07 Electrotechnology Training Package CSUs Version 2

Note:

1. RTOs shall ensure appropriate analysis of all the skills and knowledge specified in the respective competency standard units in this Training Package is undertaken with that of the version 2 Training Package (UEE07), in determining equivalence.
2. In granting an equivalence of an UEE07 – V2 unit for a UEE07 – V3 unit:
 - - the prerequisite units specified for the UEE07 – V2 unit shall be included
 - - the critical aspects of evidence of the UEE07 – V2 unit and its specified prerequisite units shall be at least equal to that of the UEE07 – V3 unit.
3. This table maps only the Qualifications which have changed between these versions. Table 2 shows the relationship of UEE07 –V3 units to the version 2 Training Package UEE07.

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
UEENEEE019C	Solve problems in multiple path a.c. circuits	UEENEEE019B	Solve problems in multiple path a.c. circuits
UEENEEE024C	Compile and produce an electrotechnology report	UEENEEE024B	Compile and produce an electrotechnology report
UEENEEE048C	Carry out routine work activities in an electrotechnology environment	UEENEEE048B	Carry out routine work activities in an electrotechnology environment
UEENEEE079A	Identify and select components, accessories and materials for electrotechnology work activities	UEENEEE040B	Identify and select components/accessories/materials for electrotechnology work activities

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
UEENEEE084A	Write specifications for electrotechnology engineering projects		New Unit, Not previously
UEENEEF016A	Lay and connect cabling for direct access to telecommunications services	UEENEEF001B	Lay and connect cabling for direct access to telecommunications services
UEENEEG072C	Investigate and report on electrical incidents	UEENEEG072B	Investigate and report on electrical incidents
UEENEEG075A	Develop compliance policies and plans to conduct a contracting business	UEENEEG014B	Develop plans and compliance policies to conduct a contracting business
UEENEEH072C	Find and repair faults in communication systems	UEENEEH072B	Find and repair faults in communication systems
UEENEEH090A	Provide solutions to air traffic control system problems		New Unit, Not previously
UEENEEI007C	Install process instrumentation and control cabling and tubing	UEENEEI007B	Install process instrumentation and control cabling and tubing
UEENEEI008C	Install process control apparatus and associated equipment	UEENEEI008B	Install process control apparatus and associated equipment
UEENEEJ074A	Apply safety awareness and legal requirements for hydrocarbon refrigerants		New Unit, Not previously
UEENEEJ075A	Service and repair self contained hydrocarbon refrigeration systems		New Unit, Not previously
UEENEEJ076A	Install and commission hydrocarbon refrigeration systems, major components and associated equipment		New Unit, Not previously
UEENEEJ077A	Design hydrocarbon refrigeration systems		New Unit, Not previously
UEENEEJ078A	Apply safety awareness in using ammonia as a refrigerant		New Unit, Not previously
UEENEEJ079A	Service and repair ammonia refrigeration systems		New Unit, Not previously
UEENEEJ080A	Install and commission ammonia		New Unit, Not previously

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
	refrigeration systems		
UEENEEJ081A	Design ammonia refrigeration systems		New Unit, Not previously
UEENEEJ082A	Service and repair secondary refrigeration systems		New Unit, Not previously
UEENEEJ083A	Design secondary refrigeration systems		New Unit, Not previously
UEENEEJ084A	Apply safety awareness for in using carbon dioxide as a refrigerant		New Unit, Not previously
UEENEEJ085A	Service and repair carbon dioxide refrigeration systems		New Unit, Not previously
UEENEEJ086A	Install and commission carbon dioxide refrigeration systems		New Unit, Not previously
UEENEEJ087A	Design complex carbon dioxide refrigeration systems		New Unit, Not previously
UEENEEJ088A	Service and repair self contained carbon dioxide refrigeration and heat pump systems		New Unit, Not previously
UEENEEJ089A	Service room air conditioners servicing	UEENEEJ060B	Service room air condition
UEENEEJ089A	Service room air conditioners	UEENEEJ060B	Service room air condition
UEENEEJ090A	Select basic commercial refrigeration system equipment and components		New Unit, Not previously
UEENEEJ091A	Select residential air conditioning system equipment and components		New Unit, Not previously
UEENEEK016A	Maintain and monitor remote area generation facilities		New Unit, Not previously
UEENEEK047A	Maintain and monitor remote area essential service operations		New Unit, Not previously
UEENEEK049A	Verify compliance and functionality of a renewable energy installation	UEENEEK015B	Verify compliance and fu renewable energy installa
UEENEEK050A	Assemble and set up photovoltaic apparatus in a domestic dwelling	UEENEEK024B	Assemble and set up phot apparatus in domestic dw

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
UEENEEK051A	Develop effective strategies for energy reduction in buildings	UEENEEK041B	Develop strategies for energy reduction in buildings
UEENEEM019A	Attend to breakdowns in hazardous areas — coal mining	UEENEEM002B	Attend to breakdowns in hazardous areas
UEENEEM020A	Attend to breakdowns in hazardous areas — gas atmospheres	UEENEEM002B	Attend to breakdowns in hazardous areas
UEENEEM021A	Attend to breakdowns in hazardous areas — dust atmospheres	UEENEEM002B	Attend to breakdowns in hazardous areas
UEENEEM022A	Attend to breakdowns in hazardous areas — pressurisation	UEENEEM002B	Attend to breakdowns in hazardous areas
UEENEEM023A	Install explosion-protected equipment and wiring systems — coal mining	UEENEEM004B	Install explosion-protected equipment and wiring systems
UEENEEM024A	Install explosion-protected equipment and wiring systems — gas atmospheres	UEENEEM004B	Install explosion-protected equipment and wiring systems
UEENEEM025A	Install explosion-protected equipment and wiring systems — dust atmospheres	UEENEEM004B	Install explosion-protected equipment and wiring systems

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
UEENEEM026A	Install explosion-protected equipment and wiring systems — pressurisation	UEENEEM004B	Install explosion-protected equipment and wiring systems
UEENEEM027A	Maintain equipment in hazardous areas — coal mining	UEENEEM006B	Maintain equipment in hazardous areas
UEENEEM028A	Maintain equipment in hazardous areas — gas atmospheres	UEENEEM006B	Maintain equipment in hazardous areas
UEENEEM029A	Maintain equipment in hazardous areas — dust atmospheres	UEENEEM006B	Maintain equipment in hazardous areas
UEENEEM030A	Maintain equipment in hazardous areas — pressurisation	UEENEEM006B	Maintain equipment in hazardous areas
UEENEEM031A	Overhaul and repair of explosion-protected equipment — coal mining	UEENEEM007B	Overhaul and repair explosion-protected equipment
UEENEEM032A	Overhaul and repair of explosion-protected equipment — flameproof enclosures	UEENEEM007B	Overhaul and repair explosion-protected equipment
UEENEEM033A	Overhaul and repair of explosion-protected equipment — gas atmospheres	UEENEEM007B	Overhaul and repair explosion-protected equipment

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
UEENEEM034A	Overhaul and repair of explosion-protected equipment — dust atmospheres	UEENEEM007B	Overhaul and repair explosion-protected equipment
UEENEEM035A	Conduct a conformity assessment of explosion-protected equipment — coal mining	UEENEEM008B	Assess explosion-protected equipment for compliance with standards
UEENEEM036A	Conduct a conformity assessment of explosion-protected equipment — gas atmospheres	UEENEEM008B	Assess explosion-protected equipment for compliance with standards
UEENEEM037A	Conduct a conformity assessment of explosion-protected equipment — dust atmospheres	UEENEEM008B	Assess explosion-protected equipment for compliance with standards
UEENEEM038A	Conduct testing of hazardous areas installations — coal mining	UEENEEM009B	Test installations in hazardous areas
UEENEEM039A	Conduct testing of hazardous areas installations — gas atmospheres	UEENEEM009B	Test installations in hazardous areas
UEENEEM040A	Conduct testing of hazardous areas installations — dust atmospheres	UEENEEM009B	Test installations in hazardous areas
UEENEEM041A	Conduct testing of hazardous areas installations — pressurisation	UEENEEM009B	Test installations in hazardous areas
UEENEEM042A	Conduct visual inspection of hazardous areas installations	UEENEEM010B	Conduct close inspection of hazardous areas installations

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
UEENEEM043A	Conduct detailed inspection of hazardous areas installations — coal mining	UEENEEM011B	Conduct detailed inspection of hazardous areas installations
UEENEEM044A	Conduct detailed inspection of hazardous areas installations — gas atmospheres	UEENEEM011B	Conduct detailed inspection of hazardous areas installations
UEENEEM045A	Conduct detailed inspection of hazardous areas installations — dust atmospheres	UEENEEM011B	Conduct detailed inspection of hazardous areas installations
UEENEEM046A	Conduct detailed inspection of hazardous areas installations — pressurisation	UEENEEM011B	Conduct detailed inspection of hazardous areas installations
UEENEEM047A	Develop and manage maintenance programs for hazardous areas electrical equipment — coal mining	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment
UEENEEM048A	Develop and manage maintenance programs for hazardous areas electrical equipment — gas atmospheres	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment
UEENEEM049A	Develop and manage maintenance programs for hazardous areas electrical equipment — dust atmospheres	UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment
UEENEEM050A	Develop and manage maintenance	UEENEEM012B	Develop and manage maintenance

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
	programs for hazardous areas electrical equipment — pressurisation		programs for hazardous areas electrical equipment
UEENEEM051A	No unit available as modifications are regarded as manufacturing.	UEENEEM014B	Design and develop modified explosion-protected equipment
UEENEEM052A	Classify hazardous areas — gas atmospheres	UEENEEM015B	Classify hazardous areas
UEENEEM053A	Classify hazardous areas — dust atmospheres	UEENEEM015B	Classify hazardous areas
UEENEEM054A	Plan electrical installations for hazardous areas — gas atmospheres	UEENEEM016B	Design electrical installations for hazardous areas
UEENEEM055A	Plan electrical installations for hazardous areas — dust atmospheres	UEENEEM016B	Design electrical installations for hazardous areas
UEENEEM056A	Plan electrical installations for hazardous areas — pressurisation	UEENEEM016B	Design electrical installations for hazardous areas
UEENEEM057A	Design explosion-protected electrical systems and installations — gas atmospheres	UEENEEM017B	Design explosion-protected electrical systems
UEENEEM058A	Design explosion-protected electrical systems and installations — dust atmospheres	UEENEEM017B	Design explosion-protected electrical systems

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
UEENEEM059A	Design explosion-protected electrical systems and installations — pressurisation	UEENEEM017B	Design explosion-protected systems
UEENEEM060A	Carry out overhaul and repair of explosion-protected equipment — coal mining		New Unit, Not previously
UEENEEM061A	Carry out overhaul and repair of explosion-protected equipment — flameproof enclosures		New Unit, Not previously
UEENEEM062A	Carry out overhaul and repair of explosion-protected equipment — gas atmospheres		New Unit, Not previously
UEENEEM063A	Carry out overhaul and repair of explosion-protected equipment — dust atmospheres		New Unit, Not previously
UEENEEM064A	Conduct audit of hazardous areas installations — coal mining		New Unit, Not previously
UEENEEM065A	Conduct audit of hazardous areas installations — gas atmospheres		New Unit, Not previously
UEENEEM066A	Conduct audit of hazardous areas installations — dust atmospheres		New Unit, Not previously
UEENEEM067A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — coal mining		New Unit, Not previously
UEENEEM068A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — gas atmospheres		New Unit, Not previously
UEENEEM069A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — dust atmospheres		New Unit, Not previously
UEENEEM070A	Repair reeling, trailing and flexible cables		New Unit, Not previously

UEE07 Unit Code – V3	UEE07 Unit Title – V3	UEE07 Unit Code – V2	UEE07 Unit Title – V2
UEENEEM071A	Test reeling, trailing and flexible cables		New Unit, Not previously
UEENEEM072A	Inspect and fit plugs/couplers for reeling, trailing and flexible cables		New Unit, Not previously
UEENEEM073A	Verify compliance of repaired reeling, trailing and flexible cables		New Unit, Not previously
UEENEEM074A	Plan electrical installations in hazardous areas — Coal mining		New Unit, Not previously
UEENEEM075A	Design explosion-protected electrical systems — <i>Coal mining</i>		New Unit, Not previously
UEENEEM076A	Use and maintain the integrity of a portable gas detection device	UEENEEM003B	Use and maintain the integrity of a portable gas detection device
UEENEEM077A	Install and maintain the integrity of fixed gas detection equipment	UEENEEM005B	Install and maintain the integrity of fixed gas detection equipment
UEENEEM078A	Manage compliance of hazardous areas	UEENEEM013B	Ensure the safety of hazardous areas
UEENEEM079A	Design of gas detection systems and installations	UEENEEM018B	Design gas detection systems and installations
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	UEENEEM001B	Report on the integrity of explosion-protected equipment in hazardous areas

Table 6 – Relationship of UEE07 Electrotechnology Training Package Version 2 Units to UEE07 Electrotechnology Training Package Version 1 Units

Table 3 shows the relationship of units modified or added in UEE07 Electrotechnology Training Package Version 2 to the previous UEE07 Training Package Version 1 for information on all other units refer to Table 4 below, which shows the relationship of units from UEE07 Training Package Version 1 to the former Training Package UEE06.

UEE07 Electrotechnology Training Package Version 2 Unit Code	Title	Relates to previous UEE07 Electrotechnology Training Package Version 1 unit Code	Nature of relationship to former Training Package (Version 1)
	All Existing Qualifications in UEE07 Version 1	All existing qualifications in UEE07 version 1 remain unchanged	Refer to table mapping UEE06 qualifications to UEE07 equivalences
UEENEEK025C	Solve basic problems in photovoltaic energy apparatus	UEENEEK025B	Revised version
UEENEEK048A	Install and, configure and commission grid connected photovoltaic power systems	New Unit	New Unit
UEENEEK035C	Design grid connected power supply systems	UEENEEK035B	Revised Version
UEENEEO071C	Install and setup interval metering	UEENEEO071B	Revised Version

Table 7 Relationship of UEE07 Electrotechnology Training Package Version 1 Units to UEE06 Electrotechnology Training Package

What follows is a guide to assist RTOs in granting equivalent units when implementing this Training Package.

Note:

1. RTOs shall ensure appropriate analysis of all the skills and knowledge specified in the respective competency standard units in this Training Package is undertaken with that of the former Training Package (UEE06), in determining equivalence.
2. In granting an equivalence of an UEE06 unit for a UEE07 unit:
 - the prerequisite units specified for the UEE06 unit shall be included
 - the critical aspects of evidence of the UEE06 unit and its specified prerequisite units shall be at least equal to that of the UEE07 unit.

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEA001B	Assemble electronic apparatus	UEENEEA001A	Assemble electronic apparatus
UEENEEA002B	Select electronic components	UEENEEA002A	Select electronic components

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEA003B	Set up and check electronic component placement machines	UEENEEA003A	Set up and check electronic component placement machines
UEENEEA004B	Rework electronic sub assemblies	UEENEEA004A	Rework electronic sub assemblies
UEENEEA005B	Conduct functional and quality tests on assembled electronic apparatus	UEENEEA005A	Conduct functional and quality tests on assembled electronic apparatus
UEENEEA006B	Apply lead-free soldering techniques	UEENEEA006A	Apply lead-free soldering techniques
UEENEEA007A	RESERVED	UEENEEA007A	RESERVED
UEENEEA008A	RESERVED	UEENEEA008A	RESERVED
UEENEEA009A	RESERVED	UEENEEA009A	RESERVED
UEENEEA010B	Assemble; mount and connect switchgear and control gear	UEENEEA010A	Assemble; mount and connect switchgear and control gear
UEENEEA011A	RESERVED	UEENEEA011A	RESERVED
UEENEEA012B	Make up and assemble bus bars	UEENEEA012A	Make up and assemble bus bars
UEENEEA013B	Assemble and wire control panels	UEENEEA013A	Assemble and wire control panels
UEENEEB001B	Operate and maintain an amateur radio communication station	UEENEEB001A	Operate and maintain an amateur radio communication station
UEENEEC001B	Maintain documentation	UEENEEC001A	Maintain documentation
UEENEEC002B	Source and purchase material/parts for installation or service jobs	UEENEEC002A	Source and purchase material/parts for installation or service jobs
UEENEEC003B	Provide quotations for installation or service jobs	UEENEEC003A	Provide quotations for installation or service jobs
UEENEEC004B	Prepare specifications for the supply of materials and equipment for electrotechnology projects	UEENEEC004A	Prepare specifications for the supply of materials and equipment for electrotechnology projects
UEENEEC005B	Estimate electrotechnology projects	UEENEEC005A	Estimate electrotechnology projects

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEC006B	Prepare tender submissions for electrotechnology projects	UEENEEC006A	Prepare tender submissions for electrotechnology projects
UEENEEC007B	Manage contract variations	UEENEEC007A	Manage contract variations
UEENEEC008B	Receive and store materials and equipment for electrotechnology work	UEENEEC008A	Receive and store materials for electrotechnology work
UEENEEC009B	Provide quotations for inspection and compliance audit services	UEENEEC009A	Provide quotations for inspection and compliance audit services
UEENEEC010B	Deliver a service to customers	UEENEEC010A	Deliver a service to customers
UEENEEC011A	RESERVED	UEENEEC011A	RESERVED
UEENEEC012B	Direct technical and non-technical enquiries to appropriate personnel	UEENEEC012A	Direct technical and non-technical enquiries to appropriate personnel
UEENEEC013B	Participate in business equipment work and competency development activities	UEENEEC013A	Participate in business equipment work and competency development activities
UEENEEC014B	Participate in computer equipment work and competency development activities	UEENEEC014A	Participate in computer equipment work and competency development activities
UEENEEC015B	Participate in custom electronic installations work and competency development activities	UEENEEC015A	Participate in custom electronic installations work and competency development activities
UEENEEC016B	Participate in voice and data communications work and competency development activities	UEENEEC016A	Participate in voice and data communications work and competency development activities
UEENEEC017B	Participate in appliance servicing work and competency development activities	UEENEEC017A	Participate in appliance servicing work and competency development activities
UEENEEC018B	Participate in electrical machine repair work and competency development activities	UEENEEC018A	Participate in electrical machine repair work and competency development activities
UEENEEC019B	Participate in switchgear and control gear work and competency development activities	UEENEEC019A	Participate in switchgear and control gear work and competency development activities

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEC020B	Participate in electrical work and competency development activities	UEENEEC020A	Participate in electrical work and competency development activities
UEENEEC021B	Participate in electronics and communications work and competency development activities	UEENEEC021A	Participate in electronics and communications work and competency development activities
UEENEEC022B	Participate in fire protection control work and competency development activities	UEENEEC022A	Participate in fire protection control work and competency development activities
UEENEEC023B	Participate in gaming electronic work and competency development activities	UEENEEC023A	Participate in gaming electronic work and competency development activities
UEENEEC024B	Participate in instrumentation and control work and competency development activities	UEENEEC024A	Participate in instrumentation and control work and competency development activities
UEENEEC025B	Participate in refrigeration and air conditioning work and competency development activities	UEENEEC025A	Participate in refrigeration and air conditioning work and competency development activities
UEENEEC026B	Participate in security equipment work and competency development activities	UEENEEC026A	Participate in security equipment work and competency development activities
UEENEEC027B	Participate in rail communications and networks work and competency development activities	UEENEEC027A	Participate in rail communications and networks work and competency development activities
UEENEEC028B	Participate in hazardous areas work and competency development activities	UEENEEC028A	Participate in hazardous areas work and competency development activities
UEENEEC029B	Participate in explosion-protected equipment overhaul work and competency development activities	UEENEEC029A	Participate in explosion-protected equipment overhaul work and competency development activities
UEENEED001B	Use basic computer applications relevant to a workplace	UEENEED001A	Use basic computer applications relevant to a workplace
UEENEED002B	Assemble, set up and test personal computers	UEENEED002A	Assemble, set up and test personal computers
UEENEED003B	Evaluate and modify programs written in object oriented code	UEENEED003A	Evaluate and modify programs written in object oriented code

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEED004B	Use engineering applications software	UEENEED004A	Use engineering applications software
UEENEED005B	Enter and verify operating instructions in microprocessor equipped devices	UEENEED005A	Enter and verify operating instructions in microprocessor equipped devices
UEENEED006A	RESERVED	UEENEED006A	RESERVED
UEENEED007B	Develop, enter and verify programs for programmable logic controllers using ladder instruction set	UEENEED007A	Develop, enter and verify programs for programmable logic controllers using ladder instruction set
UEENEED008B	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems	UEENEED008A	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems
UEENEED009B	Develop, enter and verify programs for industrial control systems using high level instructions	UEENEED009A	Develop, enter and verify programs for industrial control systems using high level instructions
UEENEED010B	Set up and create content for a web server	UEENEED010A	Set up and create content for a web server
UEENEED011B	Develop object oriented code	UEENEED011A	Develop object oriented code
UEENEED012B	Support computer hardware and software	UEENEED012A	Support computer hardware and software
UEENEED013B	Install and administer Unix based computers	UEENEED013A	Install and administer Unix based computers
UEENEED014B	Design and manage enterprise networks	UEENEED014A	Design and manage enterprise networks
UEENEED015B	Administer user networks	UEENEED015A	Administer user networks
UEENEED016B	Develop network services	UEENEED016A	Develop network services

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEED017B	Install and configure Internetworking systems	UEENEED017A	Install and configure Internetworking systems
UEENEED018B	Design and implement Internetworking systems	UEENEED018A	Design and implement Internetworking systems
UEENEED019B	Design and implement Internetworking systems — advanced routing	UEENEED019A	Design and implement Internetworking systems — advanced routing
UEENEED020B	Design and implement Internetworking systems — remote access	UEENEED020A	Design and implement Internetworking systems — remote access
UEENEED021B	Design and implement Internetworking systems — multi-layer switching	UEENEED021A	Design and implement Internetworking systems — multi-layer switching
UEENEED022B	Design and implement Internetworking systems — security	UEENEED022A	Design and implement Internetworking systems — security
UEENEED023B	Design and implement Internetworking systems — wireless LANs/WANs	UEENEED023A	Design and implement Internetworking systems — wireless LANs/WANs
UEENEED024B	Integrate multiple computer operating systems on a client server network	UEENEED024A	Integrate multiple computer operating systems on a client server network
UEENEED025B	Design and configure Human-Machine Interface networks	UEENEED025A	Design and configure Human-Machine Interface networks
UEENEED026B	Design a computer based control system	UEENEED026A	Design a computer based control system
UEENEED027B	Develop structured programs to control sub systems to access external devices	UEENEED027A	Develop structured programs to control sub systems to access external devices
UEENEED028B	Develop and test basic specification code for micro-controller equipped devices	UEENEED028A	Develop and test basic specification code for micro-controller equipped devices

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEED029B	Develop basic web pages for engineering applications	UEENEED029A	Develop basic web pages for engineering applications
UEENEED030B	Select, install, configure and test multimedia devices	UEENEED030A	Select, install, configure and test multimedia devices
UEENEED031B	Develop and validate basic integrated systems	UEENEED031A	Develop and validate basic integrated systems
UEENEED032B	Design integrated systems	UEENEED032A	Design integrated systems
UEENEED033B	Design complex integrated systems	UEENEED033A	Design complex integrated systems
UEENEED034B	Configure and maintain industrial control system networks	UEENEED034A	Configure and maintain industrial control system networks
UEENEED035A	RESERVED	UEENEED035A	RESERVED
UEENEED036A	RESERVED	UEENEED036A	RESERVED
UEENEED037A	RESERVED	UEENEED037A	RESERVED
UEENEED038A	RESERVED	UEENEED038A	RESERVED
UEENEED039A	RESERVED	UEENEED039A	RESERVED
UEENEED040A	RESERVED	UEENEED040A	RESERVED
UEENEED041A	RESERVED	UEENEED041A	RESERVED
UEENEED042A	RESERVED	UEENEED042A	RESERVED
UEENEED043B	Install and configure a computer operating system and software	UEENEED043A	Install and configure a computer operating system and software
UEENEED044B	Commission computer systems	UEENEED044A	Commission computer systems
UEENEED045B	Modify-redesign of computer system	UEENEED045A	Modify-redesign of computer system
UEENEED046B	Set up and configure basic local area network	UEENEED046A	Set up and configure basic local area network

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEED047B	Manage computer projects	UEENEED047A	Manage computer projects
UEENEED048B	Plan computer systems projects	UEENEED048A	Plan computer systems projects
UEENEED049A	RESERVED	UEENEED049A	RESERVED
UEENEED050B	Develop control programs for micro-computer equipped devices	UEENEED050A	Develop control programs for micro-computer equipped devices
UEENEED051B	Provide programming solution for engineering problems	UEENEED051A	Provide programming solution for engineering problems
UEENEED052B	Design embedded controller systems	UEENEED052A	Design embedded controller systems
UEENEED053B	Set up and test biometric devices	UEENEED053A	Set up and test biometric devices
UEENEED054B	Analyse and implement biometric techniques and applications	UEENEED054A	Analyse and implement biometric techniques and applications
UEENEED055B	Develop and validate biometric systems installation instructions	UEENEED055A	Develop and validate biometric systems installation instructions
UEENEEE001B	Apply OHS practices in the workplace	UEENEEE001A	Apply OHS practices in the workplace
UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components	UEENEEE002A	Dismantle, assemble and fabricate electrotechnology components
UEENEEE003B	Solve problems in extra-low voltage single path circuits	UEENEEE003A	Solve problems in extra-low voltage single path circuits
UEENEEE004B	Solve problems in multiple path d.c. circuits	UEENEEE004A	Solve problems in multiple path d.c. circuits
UEENEEE005B	Fix and secure equipment	UEENEEE005A	Fix and secure equipment
UEENEEE006B	Apply methods to maintain currency of industry developments	UEENEEE006A	Apply methods to maintain currency of industry developments

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEE007B	Use drawings, diagrams, schedules and manuals	UEENEEE007A	Use drawings, diagrams, schedules and manuals
UEENEEE008B	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	UEENEEE008A	Lay wiring/cabling and terminate accessories for extra-low voltage circuits
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	UEENEEE009A	Comply with scheduled and preventative maintenance program processes
UEENEEE010B	Develop and implement maintenance programs	UEENEEE010A	Develop and implement maintenance programs
UEENEEE011B	Manage risk in electrotechnology activities	UEENEEE011A	Manage risk in electrotechnology activities
UEENEEE012B	Manage electrotechnology projects	UEENEEE012A	Manage electrotechnology projects
UEENEEE013B	Plan electrotechnology projects	UEENEEE013A	Plan electrotechnology projects
UEENEEE014B	Supervise and coordinate work activities	UEENEEE014A	Supervise and coordinate work activities
UEENEEE015B	Develop design briefs for electrotechnology projects	UEENEEE015A	Develop design briefs for electrotechnology projects
UEENEEE016B	Write specifications for electrotechnology projects	UEENEEE016A	Write specifications for electrotechnology projects
UEENEEE017B	Implement and monitor OHS policies and procedures	UEENEEE017A	Implement and monitor OHS policies and procedures
UEENEEE018B	Establish, maintain and evaluate OHS systems	UEENEEE018A	Establish, maintain and evaluate OHS systems
UEENEEE019B	Solve problems in multiple path a.c. circuits	UEENEEE019A	Solve problems in multiple path a.c. circuits
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	UEENEEE020A	Provide basic instruction in the use of electrotechnology apparatus
UEENEEE021B	Plan an integrated cabling system	UEENEEE021A	Plan an integrated cabling system

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEE022B	Carry out preparatory electrotechnology work activities	UEENEEE022A	Carry out preparatory electrotechnology work activities
UEENEEE023B	Solve basic problems in electronic and digital equipment	UEENEEE023A	Solve basic problems in electronic and digital equipment
UEENEEE024C	Compile and produce an electrotechnology report	UEENEEE024A	Compile and produce an electrotechnology report
UEENEEE025B	Solve problems in complex multiple path circuits	UEENEEE025A	Solve problems in complex multiple path circuits
UEENEEE026B	Provide computational solutions to basic engineering problems	UEENEEE026A	Provide computational solutions to basic engineering problems
UEENEEE027B	Use advanced computational processes to provide solutions to engineering problems	UEENEEE027A	Use advanced computational processes to provide solutions to engineering problems
UEENEEE028B	Develop engineering solutions to photonic problems	UEENEEE028A	Develop engineering solutions to photonic problems
UEENEEE029B	Solve electrotechnical problems	UEENEEE029A	Solve electrotechnical problems
UEENEEE030B	Provide solutions to and report on routine electrotechnology problems	UEENEEE030A	Provide solutions to and report on routine electrotechnology problems
UEENEEE031A	RESERVED	UEENEEE031A	RESERVED
UEENEEE032B	Document occupational hazards and risks in computer systems	UEENEEE032A	Document occupational hazards and risks in computer systems
UEENEEE033B	Document occupational hazards and risks in electrical	UEENEEE033A	Document occupational hazards and risks in electrical
UEENEEE034B	Document occupational hazards and risks in electronics	UEENEEE034A	Document occupational hazards and risks in electronics
UEENEEE035B	Document occupational hazards and risks in instrumentation	UEENEEE035A	Document occupational hazards and risks in instrumentation

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEE036B	Document occupational hazards and risks in refrigeration and Air-conditioning	UEENEEE036A	Document occupational hazards in refrigeration and Air-conditioning
UEENEEE037B	Document occupational hazards and risks in electrotechnology	UEENEEE037A	Document occupational hazards in electrotechnology
UEENEEE038B	Participate in development and follow a personal competency development plan	UEENEEE038A	Participate in development and follow a personal competency development plan
UEENEEE039A	RESERVED	UEENEEE039A	RESERVED
UEENEEE040B	Identify and select components/accessories/materials for electrotechnology work activities	UEENEEE040A	Identify and select components/accessories/materials for electrotechnology work activities
UEENEEE041B	Use of routine equipment/plant/technologies in an electrotechnology environment	UEENEEE041A	Use of routine equipment/plant/technologies in an electrotechnology environment
UEENEEE042B	Produce routine products for carrying out electrotechnology work activities	UEENEEE042A	Produce routine products for carrying out electrotechnology work activities
UEENEEE043B	Produce routine tools/devices for carrying out electrotechnology work activities	UEENEEE043A	Produce routine tools/devices for carrying out electrotechnology work activities
UEENEEE044B	Apply technologies and concepts to electrotechnology work activities	UEENEEE044A	Apply technologies and concepts to electrotechnology work activities
UEENEEE045B	Apply computation when using equipment, materials and concepts in an electrotechnology environment	UEENEEE045A	Apply computation when using equipment, materials and concepts in an electrotechnology environment
UEENEEE046B	Identify affects of energy on machinery and materials in an electrotechnology environment	UEENEEE046A	Identify affects of energy on machinery and materials in an electrotechnology environment
UEENEEE047B	Identify building techniques, methods and materials used in electrotechnology work activities	UEENEEE047A	Identify building techniques, methods and materials used in electrotechnology work activities
UEENEEE048C	Carry out routine work activities in an electrotechnology environment	UEENEEE048A	Carry out routine work activities in an electrotechnology environment

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEE049B	Contribute to the operation of support plant and equipment used in electricity supply	UEENEEE049A	Contribute to the operation of support plant and equipment used in electricity supply
UEENEEE050B	Undertake computations in an electrotechnology environment	UEENEEE050A	Undertake computations in an electrotechnology environment
UEENEEE051B	Transport apparatus and materials	UEENEEE051A	Transport apparatus and materials
UEENEEE052A	RESERVED	UEENEEE052A	RESERVED
UEENEEE053A	RESERVED	UEENEEE053A	RESERVED
UEENEEE054A	RESERVED	UEENEEE054A	RESERVED
UEENEEE055A	RESERVED	UEENEEE055A	RESERVED
UEENEEE056A	RESERVED	UEENEEE056A	RESERVED
UEENEEE057A	RESERVED	UEENEEE057A	RESERVED
UEENEEE058A	RESERVED	UEENEEE058A	RESERVED
UEENEEE059A	RESERVED	UEENEEE059A	RESERVED
UEENEEE060B	Provide solutions for uses of materials and thermodynamic effects	UEENEEE060A	Provide solutions for uses of materials and thermodynamic effects
UEENEEE061B	Analyse static and dynamic parameters of equipment	UEENEEE061A	Analyse static and dynamic parameters of equipment
UEENEEE062B	Select drive components for equipment design	UEENEEE062A	Select drive components for equipment design
UEENEEE063B	Analyse materials for suitability in equipment	UEENEEE063A	Analyse materials for suitability in equipment
UEENEEE064B	Design machine drives and production layout plans	UEENEEE064A	Design machine drives and production layout plans
UEENEEE065A	RESERVED	UEENEEE065A	RESERVED
UEENEEE066A	RESERVED	UEENEEE066A	RESERVED

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Packa
UEENEEE067A	RESERVED	UEENEEE067A	RESERVED
UEENEEE068A	RESERVED	UEENEEE068A	RESERVED
UEENEEE069A	RESERVED	UEENEEE069A	RESERVED
UEENEEE070B	Write specifications for computer systems engineering projects	UEENEEE070A	Write specifications for co engineering projects
UEENEEE071B	Write specifications for electrical engineering projects	UEENEEE071A	Write specifications for ele engineering projects
UEENEEE072B	Write specifications for electronics and communications engineering projects	UEENEEE072A	Write specifications for ele communications engineeri
UEENEEE073B	Write specifications for refrigeration and air conditioning engineering projects	UEENEEE073A	Write specifications for ref air conditioning engineerin
UEENEEE074B	Write specifications for renewable energy engineering projects	UEENEEE074A	Write specifications for ren engineering projects
UEENEEE075B	Write specifications for industrial electronics and control projects	UEENEEE075A	Write specifications for ind electronics and control pro
UEENEEE076A	RESERVED	UEENEEE076A	RESERVED
UEENEEE077B	Write specifications for automated systems projects	UEENEEE077A	Write specifications for au systems projects
UEENEEE078B	Contribute to risk management in electrotechnology systems	UEENEEE078A	Contribute to risk managem electrotechnology systems
UEENEEF001B	Lay and connect cabling for direct access to telecommunication services	UEENEEF001A	Lay and connect cabling fo to telecommunication serv
UEENEEF002B	Lay and connect cables for multiple access to telecommunication services	UEENEEF002A	Lay and connect cables for to telecommunication serv
UEENEEF003B	Install and maintain cabling for telecommunication services in lifts	UEENEEF003A	Install and maintain cabling telecommunication service
UEENEEF004B	Install and modify performance data communication structured cabling	UEENEEF004A	Install and modify perform communication structured
UEENEEF005B	Install and modify performance data	UEENEEF005A	Install and modify perform

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
	communication optical fibre cabling		communication optical fibre cabling
UEENEEF006B	Solve problems in data and voice communications circuits	UEENEEF006A	Solve problems in data and voice communications circuits
UEENEEF007B	Set up the wireless capabilities of communications and data storage devices	UEENEEF007A	Set up the wireless capabilities of communications and data storage devices
UEENEEF008B	Select and arrange equipment for wireless networks	UEENEEF008A	Select and arrange equipment for wireless networks
UEENEEF009B	Install and connect voice and data communications equipment	UEENEEF009A	Install and connect voice and data communications equipment
UEENEEF010B	Select and arrange equipment for local area networks	UEENEEF010A	Select and arrange equipment for local area networks
UEENEEF011B	Test, report and rectify faults in voice and data installations	UEENEEF011A	Test, report and rectify faults in voice and data installations
UEENEEF012B	Install aerial communication cables	UEENEEF012A	Install aerial communication cables
UEENEEF013B	Install below ground communication cables	UEENEEF013A	Install below ground communication cables
UEENEEF014B	Set up and configure basic data communications systems	UEENEEF014A	Set up and configure basic data communications systems
UEENEEF015B	Assemble and connect communication frames and cabinets	UEENEEF015A	Assemble and connect communication frames and cabinets
UEENEEG001B	Solve problems in electromagnetic circuits	UEENEEG001A	Solve problems in electromagnetic circuits
UEENEEG002B	Solve problems in single and three phase low voltage circuits	UEENEEG002A	Solve problems in single and three phase low voltage circuits
UEENEEG003B	Install wiring and accessories for low voltage circuits	UEENEEG003A	Install wiring and accessories for low voltage circuits
UEENEEG004B	Install low voltage electrical apparatus	UEENEEG004A	Install low voltage electrical apparatus

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
	and associated equipment		associated equipment
UEENEEG005B	Verify compliance and functionality of general electrical installations	UEENEEG005A	Verify compliance and functionality of general electrical installations
UEENEEG006A	RESERVED	UEENEEG006A	RESERVED
UEENEEG007B	Select and arrange equipment for general electrical installations	UEENEEG007A	Select and arrange equipment for general electrical installations
UEENEEG008B	Find and repair faults in electrical apparatus and circuits	UEENEEG008A	Find and repair faults in electrical apparatus and circuits
UEENEEG009B	Develop and connect control circuits	UEENEEG009A	Develop and connect control circuits
UEENEEG010B	Find and repair faults in d.c. electrical apparatus and circuits	UEENEEG010A	Find and repair faults in d.c. electrical apparatus and circuits
UEENEEG011B	Carry out basic repairs to electrical apparatus	UEENEEG011A	Carry out basic repairs to electrical apparatus
UEENEEG012B	Solve fundamental problems in electrical systems	UEENEEG012A	Solve fundamental problems in electrical systems
UEENEEG013B	Install and maintain emergency systems.	UEENEEG013A	Install and maintain emergency systems.
UEENEEG014B	Develop plans and compliance policies to conduct a contracting business	UEENEEG014A	Develop plans and compliance policies to conduct a contracting business
UEENEEG015B	Find and rectify faults in energy supply network equipment	UEENEEG015A	Find and rectify faults in energy supply network equipment
UEENEEG016B	Diagnose and rectify faults in lifts systems	UEENEEG016A	Diagnose and rectify faults in lifts systems
UEENEEG017B	Install electrical power and control equipment for rail network signalling	UEENEEG017A	Install electrical power and control equipment for rail network signalling
UEENEEG018B	Maintain operation of electrical mining equipment	UEENEEG018A	Maintain operation of electrical mining equipment
UEENEEG019B	Maintain operation of electrical marine equipment	UEENEEG019A	Maintain operation of electrical marine equipment

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEG020B	Select and arrange equipment for special electrical installations	UEENEEG020A	Select and arrange equipment for special electrical installations
UEENEEG021B	Verify compliance and functionality of special electrical installations	UEENEEG021A	Verify compliance and functionality of special electrical installations
UEENEEG022B	Conduct compliance inspection of single phase electrical installations	UEENEEG022A	Conduct compliance inspection of single phase electrical installations
UEENEEG023B	Conduct compliance inspection of electrical installations with demand exceeding 100A per phase	UEENEEG023A	Conduct compliance inspection of electrical installations with demand exceeding 100A per phase
UEENEEG024B	Conduct compliance inspection of special electrical installations	UEENEEG024A	Conduct compliance inspection of special electrical installations
UEENEEG025B	Plan electrical installations with a LV demand up to 400A per phase	UEENEEG025A	Plan electrical installations with a LV demand up to 400A per phase
UEENEEG026B	Install and maintain field power and distribution systems with a LV demand up to 200 A per phase	UEENEEG026A	Install and maintain field power and distribution systems with a LV demand up to 200 A per phase
UEENEEG027B	Design electrical installations with a LV demand greater than 400 A per phase	UEENEEG027A	Design electrical installations with a LV demand greater than 400 A per phase
UEENEEG028B	Plan switchboard and control panel layouts	UEENEEG028A	Plan switchboard and control panel layouts
UEENEEG029B	Overhaul and repair major switchgear/controlgear	UEENEEG029A	Overhaul and repair major switchgear/controlgear
UEENEEG030B	Design switchboards rated for high fault levels	UEENEEG030A	Design switchboards rated for high fault levels
UEENEEG031B	Evaluate performance of electrical apparatus	UEENEEG031A	Evaluate performance of electrical apparatus
UEENEEG032B	Carry out electrical field testing and report findings	UEENEEG032A	Carry out electrical field testing and report findings
UEENEEG033A	RESERVED	UEENEEG033A	RESERVED

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Packa
UEENEEG034B	Perform high voltage field switching to a given schedule	UEENEEG034A	Perform high voltage field given schedule
UEENEEG035B	Diagnose and rectify faults in a.c. motor drive systems	UEENEEG035A	Diagnose and rectify faults drive systems
UEENEEG036B	Diagnose and rectify faults in d.c. motor drive systems	UEENEEG036A	Diagnose and rectify faults drive systems
UEENEEG037B	Diagnose and rectify faults in energy supply apparatus	UEENEEG037A	Diagnose and rectify faults supply apparatus
UEENEEG038B	Diagnose and rectify faults in electrical energy distribution systems	UEENEEG038A	Diagnose and rectify faults energy distribution system
UEENEEG039B	Diagnose and rectify faults in distributed generation systems	UEENEEG039A	Diagnose and rectify faults generation systems
UEENEEG040B	Develop engineering solutions for energy supply power transformer problems	UEENEEG040A	Develop engineering solut supply power transformer
UEENEEG041B	Diagnose and rectify faults in servo drive systems	UEENEEG041A	Diagnose and rectify faults systems
UEENEEG042B	Diagnose and rectify faults in electrical energy supply transmission systems	UEENEEG042A	Diagnose and rectify faults energy supply transmission
UEENEEG043B	Develop engineering solution for synchronous machine problems	UEENEEG043A	Develop engineering solut synchronous machine prob
UEENEEG044B	Develop engineering solutions for d.c. machine problems	UEENEEG044A	Develop engineering solut machine problems
UEENEEG045B	Develop engineering solutions for induction motor problems	UEENEEG045A	Develop engineering solut induction motor problems
UEENEEG046B	Develop engineering solutions for energy supply system protection problems	UEENEEG046A	Develop engineering solut supply system protection p
UEENEEG047B	Provide computational solutions to power engineering problems	UEENEEG047A	Provide computational sol engineering problems
UEENEEG048B	Solve problems in complex multiple path power circuits	UEENEEG048A	Solve problems in complex power circuits

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEG049B	Solve problems in complex polyphase power circuits	UEENEEG049A	Solve problems in complex power circuits
UEENEEG050B	Wind coils	UEENEEG050A	Wind coils
UEENEEG051B	Place and connect coils	UEENEEG051A	Place and connect coils
UEENEEG052B	Rewind single phase induction machines	UEENEEG052A	Rewind single phase induction machines
UEENEEG053B	Rewind three phase induction machines rated for low voltage	UEENEEG053A	Rewind three phase induction machines rated for low voltage
UEENEEG054B	Rewind direct current machines rated for low voltage	UEENEEG054A	Rewind direct current machines rated for low voltage
UEENEEG055B	Rewind three phase induction machines rated for high voltage to 3.3 kV	UEENEEG055A	Rewind three phase induction machines rated for high voltage to 3.3 kV
UEENEEG056B	Rewind three phase induction machines rated for high voltage above 3.3 kV	UEENEEG056A	Rewind three phase induction machines rated for high voltage above 3.3 kV
UEENEEG057B	Conduct electrical tests on low voltage electrical machines	UEENEEG057A	Conduct electrical tests on low voltage electrical machines
UEENEEG058B	Conduct electrical tests on high voltage electrical machines	UEENEEG058A	Conduct electrical tests on high voltage electrical machines
UEENEEG059B	Conduct mechanical tests on electrical machines	UEENEEG059A	Conduct mechanical tests on electrical machines
UEENEEG060B	Evaluate performance of electrical machines	UEENEEG060A	Evaluate performance of electrical machines
UEENEEG061B	Design and develop modifications to electrical machines	UEENEEG061A	Design and develop modifications to electrical machines
UEENEEG062B	Set up and place electrical apparatus and associated circuits into service	UEENEEG062A	Set up and place electrical apparatus and associated circuits into service
UEENEEG063A	RESERVED	UEENEEG063A	RESERVED
UEENEEG064B	Repair mechanical components of electrical machines	UEENEEG064A	Repair mechanical components of electrical machines

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
	electrical machines		electrical machines
UEENEEG065B	Maintain and service traction lifts	UEENEEG065A	Maintain and service traction lifts
UEENEEG066B	Installation and maintenance of escalators, moving walks and tread ways	UEENEEG066A	Installation and maintenance of escalators, moving walks and tread ways
UEENEEG067B	Align and install lift equipment	UEENEEG067A	Align and install lift equipment
UEENEEG068B	Diagnose and rectify faults in complex lifts systems	UEENEEG068A	Diagnose and rectify faults in complex lifts systems
UEENEEG069B	Manage electrical projects	UEENEEG069A	Manage electrical projects
UEENEEG070B	Plan electrical projects	UEENEEG070A	Plan electrical projects
UEENEEG071B	Install and set up interval metering	UEENEEG071A	Install and set up interval metering
UEENEEG072B	Investigate and report on electrical incidents	UEENEEG072A	Investigate and report on electrical incidents
UEENEEH001B	Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies	UEENEEH001A	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	UEENEEH002A	Carry out basic repairs to electronic apparatus by replacement of components
UEENEEH003B	Carry out routine repairs to business equipment	UEENEEH003A	Carry out routine repairs to business equipment
UEENEEH004B	Set up and test residential audio/video equipment	UEENEEH004A	Set up and test residential audio/video equipment
UEENEEH005B	Verify compliance and functionality of custom electronic installations	UEENEEH005A	Verify compliance and functionality of custom electronic installations

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEH006B	Assemble and set up fixed audio/video components and systems in buildings and premises	UEENEEH006A	Assemble and set up fixed components and systems in premises
UEENEEH007B	Carry out repairs of predictable faults in general electronic apparatus	UEENEEH007A	Carry out repairs of predictable faults in general electronic apparatus
UEENEEH008B	Assemble and erect reception antennae and signal distribution equipment	UEENEEH008A	Assemble and erect reception antennae and signal distribution equipment
UEENEEH009B	Set up and test gaming/games equipment	UEENEEH009A	Set up and test gaming/games equipment
UEENEEH010B	Install commercial audio/video system components	UEENEEH010A	Install commercial audio/video system components
UEENEEH011B	Solve problems in d.c. power supplies with single phase input	UEENEEH011A	Solve problems in d.c. power supplies with single phase input
UEENEEH012B	Solve problems in digital components of electronic apparatus	UEENEEH012A	Solve problems in digital components of electronic apparatus
UEENEEH013B	Solve problems in amplifier sections of electronic apparatus	UEENEEH013A	Solve problems in amplifier sections of electronic apparatus
UEENEEH014B	Solve problems in frequency dependent circuits	UEENEEH014A	Solve problems in frequency dependent circuits
UEENEEH015B	Solve problems in microprocessor based hardware and firmware	UEENEEH015A	Solve problems in microprocessor based hardware and firmware
UEENEEH016B	Find and repair faults in the microwave amplifier sections in electronic apparatus	UEENEEH016A	Find and repair faults in the microwave amplifier sections in electronic apparatus

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEH017B	Carry out repairs of predictable faults in audio and video replay/recording apparatus	UEENEEH017A	Carry out repairs of predictable faults in audio and video replay/recording apparatus
UEENEEH018B	Find and repair faults in electronic apparatus	UEENEEH018A	Find and repair faults in electronic apparatus
UEENEEH019B	Carry out repairs of predictable faults in television receivers	UEENEEH019A	Carry out repairs of predictable faults in television receivers
UEENEEH020B	Find and repair faults in gaming and games equipment	UEENEEH020A	Find and repair faults in gaming and games equipment
UEENEEH021B	Find and repair faults in high volume office equipment	UEENEEH021A	Find and repair faults in high volume office equipment
UEENEEH022B	Find and repair faults in remote control apparatus	UEENEEH022A	Find and repair faults in remote control apparatus
UEENEEH023B	Find and repair faults in microwave heating apparatus	UEENEEH023A	Find and repair faults in microwave heating apparatus
UEENEEH024B	Carry out repairs of predictable faults in audio components	UEENEEH024A	Carry out repairs of predictable faults in audio components
UEENEEH025B	Provide solutions to single phase electronic power control problems	UEENEEH025A	Provide solutions to single phase electronic power control problems
UEENEEH026B	Provide solutions to polyphase electronic power control problems	UEENEEH026A	Provide solutions to polyphase electronic power control problems
UEENEEH027B	Commission commercial radio frequency (RF) transmission and reception systems	UEENEEH027A	Commission commercial radio frequency (RF) transmission and reception systems
UEENEEH028B	Install microwave and antennae and waveguides	UEENEEH028A	Install microwave and antennae and waveguides
UEENEEH029B	Diagnose and rectify faults in navigation systems	UEENEEH029A	Diagnose and rectify faults in navigation systems
UEENEEH030B	Diagnose and rectify faults in satellite-based surveillance and observation systems	UEENEEH030A	Diagnose and rectify faults in satellite-based surveillance and observation systems

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEH031B	Diagnose and rectify faults in radar apparatus and systems	UEENEEH031A	Diagnose and rectify faults in radar apparatus and systems
UEENEEH032B	Diagnose and rectify faults in global positioning systems	UEENEEH032A	Diagnose and rectify faults in global positioning systems
UEENEEH033B	Diagnose and rectify faults in telecommunication apparatus and systems	UEENEEH033A	Diagnose and rectify faults in telecommunication apparatus and systems
UEENEEH034B	Diagnose and rectify faults in electronic medical equipment	UEENEEH034A	Diagnose and rectify faults in electronic medical equipment
UEENEEH035B	Design custom electronic installations	UEENEEH035A	Design custom electronic installations
UEENEEH036B	Design commercial audio/video installations	UEENEEH036A	Design commercial audio/video installations
UEENEEH037B	Program and commission commercial audio/video systems	UEENEEH037A	Program and commission commercial audio/video systems
UEENEEH038B	Find and repair faults in complex power supplies	UEENEEH038A	Find and repair faults in complex power supplies
UEENEEH039B	Solve problems in basic amplifier circuits	UEENEEH039A	Solve problems in basic amplifier circuits
UEENEEH040B	Diagnose and rectify faults in sonar apparatus and systems	UEENEEH040A	Diagnose and rectify faults in sonar apparatus and systems
UEENEEH041B	Manage and implement electronic projects	UEENEEH041A	Manage and implement electronic projects
UEENEEH042B	Solve problems in oscillator sections of electronic apparatus	UEENEEH042A	Solve problems in oscillator sections of electronic apparatus
UEENEEH043B	Diagnose and rectify faults in digital subsystems of electronic controls	UEENEEH043A	Diagnose and rectify faults in digital subsystems of electronic controls
UEENEEH044B	Diagnose and rectify faults in analogue	UEENEEH044A	Diagnose and rectify faults in analogue

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
	circuits and components in electronic control systems		circuits and components in control systems
UEENEEH045B	Develop solutions to analogue electronic problems	UEENEEH045A	Develop solutions to analogue problems
UEENEEH046B	Solve fundamental problems in electronic communications systems	UEENEEH046A	Solve fundamental problems in communications systems
UEENEEH047B	Assess compliance of electronic apparatus	UEENEEH047A	Assess compliance of electronic apparatus
UEENEEH048B	Design and develop advanced digital systems	UEENEEH048A	Design and develop advanced digital systems
UEENEEH049B	Develop solutions to audio electronic problems	UEENEEH049A	Develop solutions to audio electronic problems
UEENEEH050B	Assemble and set up basic wired and wireless security systems	UEENEEH050A	Assemble and set up basic wired and wireless security systems
UEENEEH051B	Install large wired and wireless security systems	UEENEEH051A	Install large wired and wireless security systems
UEENEEH052B	Enter instructions and test basic wired and wireless security systems	UEENEEH052A	Enter instructions and test basic wired and wireless security systems
UEENEEH053B	Program and test large wired and wireless security systems	UEENEEH053A	Program and test large wired and wireless security systems
UEENEEH054B	Program and commission commercial security alarm systems	UEENEEH054A	Program and commission commercial security alarm systems
UEENEEH055B	Program and commission commercial security access control systems	UEENEEH055A	Program and commission commercial security access control systems
UEENEEH056B	Program and commission commercial security closed circuit television (CCTV) systems	UEENEEH056A	Program and commission commercial security closed circuit television systems
UEENEEH057B	Develop basic integrated security systems plan	UEENEEH057A	Develop basic integrated security systems plan
UEENEEH058B	Design integrated security systems for a single site	UEENEEH058A	Design integrated security systems for a single site

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEH059B	Design integrated complex security systems	UEENEEH059A	Design integrated complex systems
UEENEEH060B	Plan electronic projects	UEENEEH060A	Plan electronic projects
UEENEEH061B	Position and terminate fire detection and warning system apparatus	UEENEEH061A	Position and terminate fire warning system apparatus
UEENEEH062B	Verify compliance and functionality of fire protection installations	UEENEEH062A	Verify compliance and function fire protection installations
UEENEEH063B	Enter and verify programs in preparation for commissioning fire protection systems	UEENEEH063A	Enter and verify programs for commissioning fire protection systems
UEENEEH064B	Commission commercial fire protection systems	UEENEEH064A	Commission commercial fire protection systems
UEENEEH065B	Find and repair faults in fire protection systems	UEENEEH065A	Find and repair faults in fire protection systems
UEENEEH066B	Fault find Microcontroller based hardware	UEENEEH066A	Fault find Microcontroller based hardware
UEENEEH067B	Commission electronics and communications systems	UEENEEH067A	Commission electronics and communications systems
UEENEEH068B	Modify-redesign of electronics and communications system	UEENEEH068A	Modify-redesign of electronics and communications system
UEENEEH069B	Solve problems in electronic circuits	UEENEEH069A	Solve problems in electronic circuits
UEENEEH070B	Terminate and connect components, conductors, wiring and cables for electronic circuits	UEENEEH070A	Terminate and connect components, conductors, wiring and cables for electronic circuits
UEENEEH071B	Find and repair faults in television receivers	UEENEEH071A	Find and repair faults in television receivers

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Packa
UEENEEH072B	Find and repair faults in the RF sections of electronic apparatus	UEENEEH072A	Find and repair faults in the electronic apparatus
UEENEEH073B	Find and repair faults in professional audio reproduction components	UEENEEH073A	Find and repair faults in professional audio reproduction components
UEENEEH074B	Find and repair faults in audio/video recording equipment	UEENEEH074A	Find and repair faults in audio recording equipment
UEENEEH075B	Find and rectify faults and malfunctions in security system installations	UEENEEH075A	Find and rectify faults and malfunctions in security system installations
UEENEEH076B	Diagnose and rectify faults in display circuits	UEENEEH076A	Diagnose and rectify faults in display circuits
UEENEEH077B	Diagnose and rectify faults in recording and replay apparatus	UEENEEH077A	Diagnose and rectify faults in recording and replay apparatus
UEENEEH078B	Diagnose and rectify faults in camera circuits	UEENEEH078A	Diagnose and rectify faults in camera circuits
UEENEEH079B	Diagnose and rectify faults in digital television apparatus	UEENEEH079A	Diagnose and rectify faults in digital television apparatus
UEENEEH080B	Diagnose and rectify faults in digital transmission systems	UEENEEH080A	Diagnose and rectify faults in digital transmission systems
UEENEEH081B	Design printed circuit boards	UEENEEH081A	Design printed circuit boards
UEENEEH082B	Develop solutions to RF amplifiers problems	UEENEEH082A	Develop solutions to RF amplifier problems
UEENEEH083B	Analyse the performance of wireless-	UEENEEH083A	Analyse the performance of wireless-

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
	based electronic systems		based electronic systems
UEENEEH084B	Design DSP-based systems	UEENEEH084A	Design DSP-based systems
UEENEEH085B	Design electronic data acquisition systems	UEENEEH085A	Design electronic data acquisition systems
UEENEEH086B	Commission microwave and satellite communication systems	UEENEEH086A	Commission microwave and satellite communication systems
UEENEEH087B	Solve problems in musical equipment circuits	UEENEEH087A	Solve problems in musical equipment circuits
UEENEEH088B	Design and develop electronics/computer systems project	UEENEEH088A	Design and develop electronics/computer systems project
UEENEEI001B	Install and set up transducers and sensing devices	UEENEEI001A	Install and set up transducers and sensing devices
UEENEEI002B	Solve problems in pressure measurement systems	UEENEEI002A	Solve problems in pressure measurement systems
UEENEEI003B	Solve problems in density/level measurement systems	UEENEEI003A	Solve problems in density/level measurement systems
UEENEEI004B	Solve problems in flow measurement systems	UEENEEI004A	Solve problems in flow measurement systems
UEENEEI005B	Solve problems in temperature measurement systems	UEENEEI005A	Solve problems in temperature measurement systems
UEENEEI006B	Solve problems in process controllers, transmitters and converters	UEENEEI006A	Solve problems in process controllers, transmitters and converters
UEENEEI007B	Install process instrumentation and control cabling and tubing	UEENEEI007A	Install process instrumentation and control cabling and tubing
UEENEEI008B	Install process control apparatus and associated equipment	UEENEEI008A	Install process control apparatus and associated equipment
UEENEEI009B	Set up process measuring and control instruments	UEENEEI009A	Set up process measuring and control instruments

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEI010B	Set up and adjust process control loops	UEENEEI010A	Set up and adjust process control loops
UEENEEI011B	Find and rectify faults in process control valve and associated equipment	UEENEEI011A	Find and rectify faults in process control valve and associated equipment
UEENEEI012B	Verify compliance and functionality of process control installations	UEENEEI012A	Verify compliance and functionality of process control installations
UEENEEI013B	Select equipment for process control systems	UEENEEI013A	Select equipment for process control systems
UEENEEI014B	Find and rectify faults in process control systems	UEENEEI014A	Find and rectify faults in process control systems
UEENEEI015B	Find and rectify faults in medical equipment control systems	UEENEEI015A	Find and rectify faults in medical equipment control systems
UEENEEI016A	RESERVED	UEENEEI016A	RESERVED
UEENEEI017B	Calibrate and test measuring instruments	UEENEEI017A	Calibrate and test measuring instruments
UEENEEI018A	RESERVED	UEENEEI018A	RESERVED
UEENEEI019B	Set up field control devices	UEENEEI019A	Set up field control devices
UEENEEI020B	Provide solutions to problems in basic industrial control systems	UEENEEI020A	Provide solutions to problems in basic industrial control systems
UEENEEI021B	Find and repair faults in measuring and analysis systems	UEENEEI021A	Find and repair faults in measuring and analysis systems
UEENEEI022B	Assist in commissioning process control systems	UEENEEI022A	Assist in commissioning process control systems
UEENEEI023B	Design electronic control systems	UEENEEI023A	Design electronic control systems
UEENEEI024A	RESERVED	UEENEEI024A	RESERVED
UEENEEI025B	Provide solutions to fluid circuit operations	UEENEEI025A	Provide solutions to fluid circuit operations

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEI026B	Provide solutions to pneumatic/hydraulic system operations	UEENEEI026A	Provide solutions to pneumatic/hydraulic system operations
UEENEEI027B	Analyse complex electronic circuits controlling fluids	UEENEEI027A	Analyse complex electronic circuits controlling fluids
UEENEEI028B	Set up controls on complex fluid systems	UEENEEI028A	Set up controls on complex fluid systems
UEENEEI029B	Set up electronically controlled mechanically operated complex systems	UEENEEI029A	Set up electronically controlled mechanically operated complex systems
UEENEEI030B	Set up electronically controlled robotically operated complex systems	UEENEEI030A	Set up electronically controlled robotically operated complex systems
UEENEEI031A	RESERVED	UEENEEI031A	RESERVED
UEENEEI032A	RESERVED	UEENEEI032A	RESERVED
UEENEEI033B	RESERVED	UEENEEI033A	RESERVED
UEENEEI034B	Manage control projects	UEENEEI033A	Manage control projects
UEENEEI035B	Plan control projects	UEENEEI035A	Plan control projects
UEENEEI036B	Manage automated systems projects	UEENEEI036A	Manage automated systems projects
UEENEEI037B	Plan automated systems projects	UEENEEI037A	Plan automated systems projects
UEENEEJ001A	RESERVED	UEENEEJ001A	RESERVED
UEENEEJ002B	Prepare refrigerant tubing and fittings	UEENEEJ002A	Prepare refrigerant tubing and fittings
UEENEEJ003B	Determine the basic operating conditions of vapour compression systems	UEENEEJ003A	Determine the basic operating conditions of vapour compression systems
UEENEEJ004B	Determine the basic operating conditions of air conditioning systems	UEENEEJ004A	Determine the basic operating conditions of air conditioning systems
UEENEEJ005B	Position, assemble and start up split air	UEENEEJ005A	Position, assemble and start up split air

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
	conditioning systems		conditioning systems
UEENEEJ006B	Install pipe work for refrigeration and air conditioning systems	UEENEEJ006A	Install pipe work for refrigeration and air conditioning systems
UEENEEJ007B	Install refrigeration and air conditioning systems, major components and associated equipment	UEENEEJ007A	Install refrigeration and air conditioning systems, major components and associated equipment
UEENEEJ008B	Recover, pressure and leak test, evacuate and charge refrigerants	UEENEEJ008A	Recover, pressure and leak test, evacuate and charge refrigerants
UEENEEJ009B	Verify compliance and functionality of refrigeration and air conditioning installations	UEENEEJ009A	Verify compliance and functionality of refrigeration and air conditioning installations
UEENEEJ010B	Select refrigerant pipe/tube, accessories and associated controls	UEENEEJ010A	Select refrigerant pipe/tube, accessories and associated controls
UEENEEJ011B	Diagnose and rectify faults in refrigeration and air conditioning systems and components	UEENEEJ011A	Diagnose and rectify faults in refrigeration and air conditioning systems and components
UEENEEJ012B	Diagnose and rectify faults in complex refrigeration/air conditioning systems	UEENEEJ012A	Diagnose and rectify faults in complex refrigeration/air conditioning systems
UEENEEJ013B	Commission refrigeration and air conditioning systems	UEENEEJ013A	Commission refrigeration and air conditioning systems
UEENEEJ014B	Solve problems in hydronic systems	UEENEEJ014A	Solve problems in hydronic systems
UEENEEJ015B	Solve problems in beverage dispensers	UEENEEJ015A	Solve problems in beverage dispensers
UEENEEJ016B	Solve problems in transport refrigeration systems	UEENEEJ016A	Solve problems in transport refrigeration systems
UEENEEJ017B	Solve problems in ultra-low temperature refrigeration systems	UEENEEJ017A	Solve problems in ultra-low temperature refrigeration systems
UEENEEJ018B	Solve problems in post mix refrigeration systems	UEENEEJ018A	Solve problems in post mix refrigeration systems
UEENEEJ019B	Solve problems in ice making systems	UEENEEJ019A	Solve problems in ice making systems

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEJ020B	Solve problems in industrial refrigeration systems	UEENEEJ020A	Solve problems in industrial refrigeration systems
UEENEEJ021B	Monitor and adjust energy management systems on refrigeration systems	UEENEEJ021A	Monitor and adjust energy management systems on refrigeration systems
UEENEEJ022B	Diagnose faults in complex refrigeration or HVAC control systems	UEENEEJ022A	Diagnose faults in complex refrigeration or HVAC control systems
UEENEEJ023B	Commission complex heating, ventilation and air conditioning (HVAC) systems	UEENEEJ023A	Commission complex heating, ventilation and air conditioning (HVAC) systems
UEENEEJ024B	Commission hydronic systems for refrigeration and/or air conditioning	UEENEEJ024A	Commission hydronic systems for refrigeration and/or air conditioning
UEENEEJ025B	Commission complex refrigeration systems	UEENEEJ025A	Commission complex refrigeration systems
UEENEEJ026B	Commission complex control systems for refrigeration/air conditioning systems	UEENEEJ026A	Commission complex control systems for refrigeration/air conditioning systems
UEENEEJ027B	Determine thermodynamic parameters of refrigeration and air conditioning systems	UEENEEJ027A	Determine thermodynamic parameters of refrigeration and air conditioning systems
UEENEEJ028B	Produce HVAC/R design drawings	UEENEEJ028A	Produce HVAC/R design drawings
UEENEEJ029B	Determine the heat loads for commercial refrigeration and air conditioning applications	UEENEEJ029A	Determine the heat loads for commercial refrigeration and air conditioning applications
UEENEEJ030B	Produce HVAC/R control system design diagrams	UEENEEJ030A	Produce HVAC/R control system design diagrams
UEENEEJ031B	Provide solutions to vibration problems in HVAC/R system design	UEENEEJ031A	Provide solutions to vibration problems in HVAC/R system design
UEENEEJ032B	Design commercial refrigeration systems	UEENEEJ032A	Design commercial refrigeration systems
UEENEEJ033B	Design industrial refrigeration systems	UEENEEJ033A	Design industrial refrigeration systems

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEJ034B	Design heating, ventilation and air conditioning (HVAC) systems	UEENEEJ034A	Design heating, ventilation and air conditioning (HVAC) systems
UEENEEJ035B	Design control systems for a heating, ventilation, air conditioning or refrigeration system	UEENEEJ035A	Design control systems for a heating, ventilation, air conditioning or refrigeration system
UEENEEJ036B	Evaluate and report on energy management	UEENEEJ036A	Evaluate and report on energy management
UEENEEJ037B	Evaluate and report on air quality in buildings	UEENEEJ037A	Evaluate and report on air quality in buildings
UEENEEJ038B	Analyse noise and vibration in refrigeration and air conditioning systems	UEENEEJ038A	Analyse noise and vibration in refrigeration and air conditioning systems
UEENEEJ039B	Develop specifications and prepare drawings for HVAC/R projects	UEENEEJ039A	Develop specifications and prepare drawings for HVAC/R projects
UEENEEJ040B	Manage refrigeration and air conditioning projects	UEENEEJ040A	Manage refrigeration and air conditioning projects
UEENEEJ041B	Design complex commercial refrigeration systems	UEENEEJ041A	Design complex commercial refrigeration systems
UEENEEJ042B	Design complex industrial refrigeration systems	UEENEEJ042A	Design complex industrial refrigeration systems
UEENEEJ043B	Design complex air conditioning systems	UEENEEJ043A	Design complex air conditioning systems
UEENEEJ044B	Design mechanical ventilation/exhaust systems	UEENEEJ044A	Design mechanical ventilation/exhaust systems
UEENEEJ045B	Design hydronic systems	UEENEEJ045A	Design hydronic systems
UEENEEJ046B	Design complex control systems for a heating, ventilation, air conditioning or refrigeration system	UEENEEJ046A	Design complex control systems for a heating, ventilation, air conditioning or refrigeration system
UEENEEJ047B	Audit energy use for commercial HVAC/R systems	UEENEEJ047A	Audit energy use for commercial HVAC/R systems

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEJ048B	Analyse HVAC control systems for compliance with standards and regulations	UEENEEJ048A	Analyse HVAC control systems for compliance with standards and regulations
UEENEEJ049B	Develop specifications for heat exchanger designs	UEENEEJ049A	Develop specifications for heat exchanger designs
UEENEEJ050B	Evaluate alternative and new technologies applicable to electrotechnology applications	UEENEEJ050A	Evaluate alternative and new technologies applicable to electrotechnology applications
UEENEEJ051B	Service small appliances and power tools	UEENEEJ051A	Service small appliances and power tools
UEENEEJ052B	Carry out repairs to appliance refrigeration systems	UEENEEJ052A	Carry out repairs to appliance refrigeration systems
UEENEEJ053B	Find and rectify faults in appliance motors and associated controls	UEENEEJ053A	Find and rectify faults in appliance motors and associated controls
UEENEEJ054B	Find and rectify faults in appliance control devices and systems	UEENEEJ054A	Find and rectify faults in appliance control devices and systems
UEENEEJ055B	Service refrigerated appliances	UEENEEJ055A	Service refrigerated appliances
UEENEEJ056B	Service clothes washers and dryers	UEENEEJ056A	Service clothes washers and dryers
UEENEEJ057B	Service electric heating appliances	UEENEEJ057A	Service electric heating appliances
UEENEEJ058B	Service dish washing machines	UEENEEJ058A	Service dish washing machines
UEENEEJ059B	Service gas appliances	UEENEEJ059A	Service gas appliances
UEENEEJ060B	Service room air conditioners	UEENEEJ060A	Service room air conditioners
UEENEEJ061B	Verify compliance and functionality of appliances	UEENEEJ061A	Verify compliance and functionality of appliances

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEJ062B	Recover, pressure and leak test, evacuate and charge refrigerants/appliances	UEENEEJ062A	Recover, pressure and leak test, evacuate and charge refrigerants/appliances
UEENEEJ063B	Analyse the psychrometric and thermodynamic performance of HVAC/R systems	UEENEEJ063A	Analyse the psychrometric and thermodynamic performance of HVAC/R systems
UEENEEJ064B	Analyse the operation of HVAC/R systems	UEENEEJ064A	Analyse the operation of HVAC/R systems
UEENEEJ065B	Evaluate fluid and thermodynamic parameters of refrigeration systems	UEENEEJ065A	Evaluate fluid and thermodynamic parameters of refrigeration systems
UEENEEJ066B	Solve problems in dairy refrigeration systems	UEENEEJ066A	Solve problems in dairy refrigeration systems
UEENEEJ067B	Solve problems in central plant air conditioning systems	UEENEEJ067A	Solve problems in central plant air conditioning systems
UEENEEJ068B	Maintain microbial control of air and water systems	UEENEEJ068A	Maintain microbial control of air and water systems
UEENEEJ069B	Plan refrigeration and air conditioning projects	UEENEEJ069A	Plan refrigeration and air conditioning projects
UEENEEJ070B	Diagnose and rectify faults in refrigeration and air conditioning control systems	UEENEEJ070A	Diagnose and rectify faults in refrigeration and air conditioning control systems
UEENEEJ071B	Solve problems in refrigerated beverage vending cabinets	UEENEEJ071A	Solve problems in refrigerated beverage vending cabinets
UEENEEJ072B	Recover, pressure and leak test, evacuate and charge refrigerants – split air conditioning systems	UEENEEJ072A	Recover, pressure and leak test, evacuate and charge refrigerants – split air conditioning systems
UEENEEJ073B	Service microwave ovens	UEENEEJ073A	Service microwave ovens
UEENEEK001B	Maintain safety and tidiness of remote area power supply (RAPS) systems	UEENEEK001A	Maintain safety and tidiness of remote area power supply (RAPS) systems
UEENEEK002B	Work safely with remote area power supply (RAPS) systems	UEENEEK002A	Work safely with remote area power supply (RAPS) systems

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEK003B	Conduct periodic maintenance of remote area power supply (RAPS) battery banks	UEENEEK003A	Conduct periodic maintenance of remote area power supply (RAPS) battery banks
UEENEEK004B	Conduct periodic maintenance of remote area power supply (RAPS) generator sets	UEENEEK004A	Conduct periodic maintenance of remote area power supply (RAPS) generator sets
UEENEEK005B	Conduct periodic maintenance of remote area power supply (RAPS) photo voltaic arrays	UEENEEK005A	Conduct periodic maintenance of remote area power supply (RAPS) photo voltaic arrays
UEENEEK006B	Conduct periodic maintenance of remote area power supply (RAPS) wind generators	UEENEEK006A	Conduct periodic maintenance of remote area power supply (RAPS) wind generators
UEENEEK007B	Conduct checks in the demand side use of remote area power supplies	UEENEEK007A	Conduct checks in the demand side use of remote area power supplies
UEENEEK008B	Plan periodic maintenance schedules of remote area power supplies	UEENEEK008A	Plan periodic maintenance schedules of remote area power supplies
UEENEEK009B	Attend to breakdowns in remote area power supplies	UEENEEK009A	Attend to breakdowns in remote area power supplies
UEENEEK010B	Coordinate maintenance of renewable energy apparatus and systems	UEENEEK010A	Coordinate maintenance of renewable energy apparatus and systems
UEENEEK011B	Assemble and connect remote area power supplies (RAPS)	UEENEEK011A	Assemble and connect remote area power supplies (RAPS)
UEENEEK012B	Provide basic sustainable energy solutions for energy reduction in domestic premises	UEENEEK012A	Provide basic sustainable energy solutions for energy reduction in domestic premises
UEENEEK013B	Apply sustainable energy practice in daily activities	UEENEEK013A	Apply sustainable energy practice in daily activities
UEENEEK014B	Promote sustainable energy practice in the community	UEENEEK014A	Promote sustainable energy practice in the community
UEENEEK015A	RESERVED	UEENEEK015A	RESERVED
UEENEEK016A	RESERVED	UEENEEK016A	RESERVED

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEK017B	Maintain and repair facilities associated with remote area essential services operation	UEENEEK017A	Maintain and repair facilities with remote area essential operation
UEENEEK018B	Maintain operation of remote area water facilities	UEENEEK018A	Maintain operation of remote area water facilities
UEENEEK019B	Maintain operation of remote area waste water facilities	UEENEEK019A	Maintain operation of remote area waste water facilities
UEENEEK020B	Maintain operation of remote area power plant	UEENEEK020A	Maintain operation of remote area power plant
UEENEEK021B	Manage renewable energy projects	UEENEEK021A	Manage renewable energy projects
UEENEEK022B	Plan renewable energy projects	UEENEEK022A	Plan renewable energy projects
UEENEEK023B	Carry out basic repairs to renewable energy apparatus by replacement of components	UEENEEK023A	Carry out basic repairs to renewable energy apparatus by replacement of components
UEENEEK024B	Assemble and set up photovoltaic apparatus in domestic dwellings	UEENEEK024A	Assemble and set up photovoltaic apparatus in domestic dwellings
UEENEEK025B	Solve basic problems in photovoltaic energy apparatus	UEENEEK025A	Solve basic problems in photovoltaic energy apparatus
UEENEEK026B	Install and set up grid connected photovoltaic power systems	UEENEEK026A	Install and set up grid connected photovoltaic power systems
UEENEEK027B	Diagnose faults in renewable energy control systems	UEENEEK027A	Diagnose faults in renewable energy control systems
UEENEEK028B	Solve problems in stand-alone renewable energy systems	UEENEEK028A	Solve problems in stand-alone renewable energy systems
UEENEEK029B	Design renewable energy heating systems	UEENEEK029A	Design renewable energy heating systems
UEENEEK030B	Solve problems in wind energy conversion systems	UEENEEK030A	Solve problems in wind energy conversion systems
UEENEEK031B	Design wind energy conversion systems rated to 10kW	UEENEEK031A	Design wind energy conversion systems rated to 10kW

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEK032B	Develop strategies to address sustainability issues	UEENEEK032A	Develop strategies to address sustainability issues
UEENEEK033B	Design hybrid power systems	UEENEEK033A	Design hybrid power systems
UEENEEK034B	Install stand-alone photovoltaic power systems	UEENEEK034A	Install stand-alone photovoltaic power systems
UEENEEK035B	Design grid connected power supply systems	UEENEEK035A	Design grid connected power supply systems
UEENEEK036A	Prepare grid connected photovoltaic power systems for LV connection	UEENEEK036A	Prepare grid connected photovoltaic power systems for LV connection
UEENEEK037B	Install and set up micro-hydro systems	UEENEEK037A	Install and set up micro-hydro systems
UEENEEK038B	Design micro-hydro systems	UEENEEK038A	Design micro-hydro systems
UEENEEK039B	Design stand-alone renewable energy systems	UEENEEK039A	Design stand-alone renewable energy systems
UEENEEK040B	Develop engineering solutions to renewable energy problems	UEENEEK040A	Develop engineering solutions to renewable energy problems
UEENEEK041B	Develop strategies for effective energy reduction in buildings	UEENEEK041A	Develop strategies for effective energy reduction in buildings
UEENEEK042A	Participate in environmentally sustainable work practices	NEW	
UEENEEK043A	Install small wind energy conversion systems for stand-alone applications	NEW	
UEENEEK044A	RESERVED	UEENEEK044A	RESERVED
UEENEEK045A	Implement & monitor policies & procedures for environmentally sustainable electrotech work practice	NEW	
UEENEEK046A	Design energy management controls for electrical installations in buildings	NEW	

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEM001B	Report on the integrity of explosion-protected equipment in hazardous areas	UEENEEM001A	Report on the integrity of explosion-protected equipment in hazardous areas
UEENEEM002B	Attend to breakdowns in hazardous areas	UEENEEM002A	Attend to breakdowns in hazardous areas
UEENEEM003B	Use and maintain the integrity of portable gas detection devices	UEENEEM003A	Use and maintain the integrity of portable gas detection devices
UEENEEM004B	Install explosion-protected equipment and wiring systems	UEENEEM004A	Install explosion-protected equipment and wiring systems
UEENEEM005B	Install and maintain integrity of fixed gas detection equipment	UEENEEM005A	Install and maintain integrity of fixed gas detection equipment
UEENEEM006B	Maintain equipment in hazardous areas	UEENEEM006A	Maintain equipment in hazardous areas
UEENEEM007B	Overhaul and repair explosion-protected equipment	UEENEEM007A	Overhaul and repair explosion-protected equipment
UEENEEM008B	Assess explosion-protected equipment for compliance with standards	UEENEEM008A	Assess explosion-protected equipment for compliance with standards
UEENEEM009B	Test installations in hazardous areas	UEENEEM009A	Test installations in hazardous areas
UEENEEM010B	Conduct close inspection of existing hazardous areas installations	UEENEEM010A	Conduct close inspection of existing hazardous areas installations

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEM011B	Conduct detailed inspection of hazardous areas installations	UEENEEM011A	Conduct detailed inspection of hazardous areas installations
UEENEEM012B	Develop and manage maintenance programs for hazardous areas electrical equipment	UEENEEM012A	Develop and manage maintenance programs for hazardous areas electrical equipment
UEENEEM013B	Ensure the safety of hazardous areas	UEENEEM013A	Ensure the safety of hazardous areas
UEENEEM014B	Design and develop modifications to explosion-protected equipment	UEENEEM014A	Design and develop modifications to explosion-protected equipment
UEENEEM015B	Classify hazardous areas	UEENEEM015A	Classify hazardous areas
UEENEEM016B	Design electrical installations in hazardous areas	UEENEEM016A	Design electrical installations in hazardous areas
UEENEEM017B	Design explosion-protected electrical systems	UEENEEM017A	Design explosion-protected electrical systems
UEENEEM018B	Design gas detection systems	UEENEEM018A	Design gas detection systems
UEENEEN001B	Service mechanical signalling equipment and infrastructure	UEENEEN001A	Service mechanical signalling equipment and infrastructure
UEENEEN002B	Assemble and wire internal electrical signalling equipment	UEENEEN002A	Assemble and wire internal electrical signalling equipment
UEENEEN003B	Install and maintain track circuit leads and bonds	UEENEEN003A	Install and maintain track circuit leads and bonds

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Pack)
UEENEEN004B	Perform cable tests	UEENEEN004A	Perform cable tests
UEENEEN005B	Install and maintain signalling power supplies	UEENEEN005A	Install and maintain signalling power supplies
UEENEEN006B	Maintain remote control and non-vital interlocking control systems	UEENEEN006A	Maintain remote control and non-vital interlocking control systems
UEENEEN007B	Maintain power signalling and protected level crossing equipment	UEENEEN007A	Maintain power signalling and protected level crossing equipment
UEENEEN008B	Maintain on-site power operated point-activating devices	UEENEEN008A	Maintain on-site power operated point-activating devices
UEENEEN009B	Maintain track circuits equipment	UEENEEN009A	Maintain track circuits equipment
UEENEEN010B	Maintain electronic signalling and communication equipment	UEENEEN010A	Maintain electronic signalling and communication equipment
UEENEEN011B	Install and maintain power operated signalling equipment	UEENEEN011A	Install and maintain power operated signalling equipment
UEENEEN012B	Maintain power signalling and protective relay interlocking systems	UEENEEN012A	Maintain power signalling and protective relay interlocking systems
UEENEEN013B	Install and test computer based interlocking equipment	UEENEEN013A	Install and test computer based interlocking equipment
UEENEEN014B	Maintain computer based and solid state interlocking equipment	UEENEEN014A	Maintain computer based and solid state interlocking equipment
UEENEEN015B	Conduct routine inspecting and testing of new signal cables and lines	UEENEEN015A	Conduct routine inspecting and testing of new signal cables and lines
UEENEEN016B	Maintain electronic switched and microprocessor-based remote control systems	UEENEEN016A	Maintain electronic switched and microprocessor-based remote control systems
UEENEEN017B	Install and maintain transmission interface equipment	UEENEEN017A	Install and maintain transmission interface equipment
UEENEEN018B	Find and repair cable system faults	UEENEEN018A	Find and repair cable system faults

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEEN019B	Test equipment and isolate faults	UEENEEN019A	Test equipment and isolate faults
UEENEEN020B	Install electrical power and control equipment for rail networks	UEENEEN020A	Install electrical power and control equipment for rail networks
UEENEEN021A	RESERVED	UEENEEN021A	RESERVED
UEENEEN022A	RESERVED	UEENEEN022A	RESERVED
UEENEEN023A	RESERVED	UEENEEN023A	RESERVED
UEENEEN024A	RESERVED	UEENEEN024A	RESERVED
UEENEEN025B	Coordinate and manage track protection	UEENEEN025A	Coordinate and manage track protection
UEENEEN026B	Develop rail signalling maintenance programmes	UEENEEN026A	Develop rail signalling maintenance programmes
UEENEEN027B	Decommission electrical and electro-mechanical signalling from service	UEENEEN027A	Decommission electrical and electro-mechanical signalling from service
UEENEEN028B	Test and commission power signalling equipment	UEENEEN028A	Test and commission power signalling equipment
UEENEENP001B	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply	UEENEENP001A	Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply
UEENEENP002B	Attach cords and plugs to electrical equipment for connection to a single phase 250 volt supply	UEENEENP002A	Attach cords and plugs to electrical equipment for connection to a single phase 250 volt supply
UEENEENP003B	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply	UEENEENP003A	Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply
UEENEENP004B	Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply	UEENEENP004A	Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply
UEENEENP005B	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles	UEENEENP005A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles

UEE07 Unit Code	UEE07 Unit Title	UEE06 Unit Code	UEE06 Unit Title (previous Training Package)
UEENEER006B	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply	UEENEER006A	Attach flexible cables and electrical equipment connected to a high voltage supply
UEENEER007B	Locate and rectify faults in electrical low voltage equipment following prescribed procedures	UEENEER007A	Locate and rectify faults in electrical low voltage equipment following prescribed procedures
UEENEER008B	Conduct in-service safety testing of electrical cord assemblies and cord connected equipment	UEENEER008A	Conduct in-service safety testing of electrical cord assemblies and cord connected equipment
UEENEER009B	Locate and rectify faults in electrical low voltage appliances up to 250V following prescribed procedures	UEENEER009A	Locate and rectify faults in electrical low voltage appliances up to 250V following prescribed procedures
UEENEER001B	Contribute to the planning of a research project	UEENEER001A	Contribute to the planning of a research project
UEENEER002B	Contribute to the conduct of a research project	UEENEER002A	Contribute to the conduct of a research project
UEENEER003B	Contribute to the development of a product/application/service	UEENEER003A	Contribute to the development of a product/application/service
UEENEER004B	Contribute to the trial of a product/application/service	UEENEER004A	Contribute to the trial of a product/application/service
UEENEER005B	Contribute to intellectual property management	UEENEER005A	Contribute to intellectual property management
UEENEER006B	Contribute to the commercialisation of a product/application/service	UEENEER006A	Contribute to the commercialisation of a product/application/service

Note:

1. All units have been amended as follows:

- Removal of all spaces within unit codes
- Addition of '1.1 Descriptor' as a new title
- Relocation of '3.1 License to practise' to position 1.2
- Relocation of the sub-heading '2.1 Competencies' from the left hand column to the right hand column
- Relocation of the sub-heading '2.2 Literacy and Numeracy skills' from the left hand column to the right hand column
- Inclusion of the statement "For the full prerequisite chain details for this unit please refer to Table 2 in Volume 1, Part 2" in 2.1 Competencies

- Removal of all guidance text from 2) Prerequisite Unit(s), with the exception of the 'M' Hazardous Areas units
- Inclusion of '3) Employability Skills' and the statement "*The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.*" as a whole new section
- Revision of the numbering of all subsequent sections to accommodate the inclusion of the Employability Skills section at 3)
- Inclusion of the statement "*All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies*" as a new paragraph in '7) Required Skills and Knowledge'
- Changing of the number '7' in paragraph "*Solve problems in complex polyphase power circuits as described in 7) and including:*" in section 9.2 of the unit to 8.
- Complete removal of the 'Key Competencies' and 'Skills Enabling Employment' sections.

1.3.00 Assessment Guidelines

Volume 1 Part 3

Assessment Guidelines

1.3.01 Introduction

3.1 Introduction

These Assessment Guidelines provide the endorsed framework for assessment of the units of competency in this Training Package. They are designed to ensure that assessment is consistent with the current Australian Quality Training Framework *Australian Quality Training Framework (AQTF) Essential Standards for Initial and Continuing Registration*. Assessments against the competency standard units in this Training Package must be carried out in accordance with these Assessment Guidelines.

Note:

1. Using this guideline to support any assessment strategy or process does not remove the responsibility of employers and employees to ensure appropriate 'duty of care' arrangements are maintained under relevant occupational health and safety legislation, and any other prevailing legislation, regulation, standard or code. RTOs should recognise this in their assessment processes and provide requisite advice.
2. In the assessment process it should be acknowledged that State/Territory regulatory requirements and/or Codes of Practice may vary. Therefore there may be a requirement for the demonstration of a greater range of items to those specified in respective Competency Standard Units. RTOs should incorporate this in their assessment processes and practices.

1.3.02 Assessment System Overview

3.2 Assessment System Overview

This section provides an overview of the requirements for assessment when using this Training Package, including a summary of the AQTF requirements; licensing/registration requirements; and assessment pathways. By way of supporting, and reinforcing, both the concept of competency and the competency standard unit, the Electrotechnology Industry embraces the following principles:

- Wherever practicable, summative (or final) assessment is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment.
- All persons may claim formal recognition for an assessment of an individual competency standard unit or a group of units.
- All persons have the right to have relevant competencies recognised through the most expeditious assessment system and method.

Quality assessment underpins the credibility of the vocational education and training sector. The Assessment Guidelines of a Training Package are an important tool in supporting quality assessment.

Assessment within the National Skills Framework is the process of collecting evidence and making judgements about whether competency has been achieved to confirm whether an individual can perform to the standards expected in the workplace, as expressed in the relevant endorsed unit of competency.

Assessment must be carried out in accordance with the:

- benchmarks for assessment
- specific industry requirements [where industry specific requirements are adequately covered by the Training Package Assessment Guidelines Mandatory Text, this dot point should be deleted]
- principles of assessment
- rules of evidence
- assessment requirements set out in the AQTF

1.3.04 Assessment Principles within the Electrotechnology Industry

3.4 Assessment Principles within the Electrotechnology Industry

Assessment Judgments

Attributing Competency

The deeming of competency shall be based on evidence that is sufficient, valid, current and authentic, so that a quality, low risk judgment can be made based on these assessment guidelines.

Competencies shall be deemed on evidence showing that the person is able to undertake the responsibilities for all safety measures, care of technology, plant and equipment, use of standards, manuals and procedures, and care of the environment, directly related to the work function for which such competencies are required.

Note:

1. Where the consequences of incorrectly deeming a person competent carries a risk of injury to persons, commerce, or damage to property and/or the environment, the level of evidence required for sufficiency is higher than where there is little risk. The risk of attributing competence to an individual should, therefore, form a critical part of the assessment process and methodology. All prerequisites and/or co-requisites must have been achieved.
2. The decision to attribute competence differs from training effort and delivery. The decision to attribute competence is based on evidence being present for an assessor to properly make that decision, including the prerequisite conditions. Learners can undertake training in competency standard units even when they may not have acquired any of the prerequisite competency standard units. The learners cannot be attributed any competency standard unit until they have acquired the prerequisites and met all of the conditions of the unit.
3. For more detailed information refer to Section 3.9 Guide to Assessment Methods and Items.

Principles of Assessment

All assessments carried out by RTOs are required to demonstrate compliance with the principles of assessment:

- Validity
- Reliability
- Flexibility
- Fairness
- Sufficiency

These principles must be addressed in the:

- design, establishment and management of the assessment system for this Training Package
- development of assessment tools, and
- the conduct of assessment.

Validity

Assessment is valid when the process is sound and assesses what it claims to assess. Validity requires that:

- a) assessment against the units of competency must cover the broad range of skills and knowledge that are essential to competent performance
- b) assessment of knowledge and skills must be integrated with their practical application
- c) judgement of competence must be based on sufficient evidence (that is, evidence gathered on a number of occasions and in a range of contexts using different assessment methods). The specific evidence requirements of each unit of competency provide advice on sufficiency

Reliability

Reliability refers to the degree to which evidence presented for assessment is consistently interpreted and results in consistent assessment outcomes. Reliability requires the assessor to have the required competencies in assessment and relevant vocational competencies (or to assess in conjunction with someone who has the vocational competencies). It can only be achieved when assessors share a common interpretation of the assessment requirements of the unit(s) being assessed.

Flexibility

To be flexible, assessment should reflect the candidate's needs; provide for recognition of competencies no matter how, where or when they have been acquired; draw on a range of methods appropriate to the context, competency and the candidate; and support continuous competency development.

Fairness

Fairness in assessment requires consideration of the individual candidate's needs and characteristics, and any reasonable adjustments that need to be applied to take account of them. It requires clear communication between the assessor and the candidate to ensure that the candidate is fully informed about, understands and is able to participate in, the assessment process, and agrees that the process is appropriate. It also includes an opportunity for the person being assessed to challenge the result of the assessment and to be reassessed if necessary.

Sufficiency

Sufficiency relates to the quality and quantity of evidence assessed. It requires collection of enough appropriate evidence to ensure that all aspects of competency have been satisfied and that competency can be demonstrated repeatedly. Supplementary sources of evidence may be necessary. The specific evidence requirements of each unit of competency provide advice on sufficiency. Sufficiency is also one of the rules of evidence.

Current

In assessment, currency relates to the age of the evidence presented by a candidate to demonstrate that they are still competent. Competency requires demonstration of current performance, so the evidence collected must be from either the present or the very recent past. The principle to be applied in the Electrotechnology Industry when determining currency of evidence is that claims are to be fully substantiated through both direct and indirect assessment processes.

Assessment processes ensure the candidate is current in terms of knowledge of the technology and/or processes and in the recency of application of the knowledge and skills.

Regulatory Context of Assessment

The determination of competency is to be based on evidence of having consistently performed autonomously and to requirements across a representative range of specified equipment, processes and activities for the scope of work and/or endorsement for which competency is being sought. Evidence from a number of sources is acceptable, including formal assessment. With respect to the essential knowledge and associated skills (EKAS) component of each competency standard unit, assessment activities shall be in accordance with the approach required by the regulatory environment. This may include the use of industry supported essential knowledge and associated skills knowledge and skills specifications intended to ensure the depth and breadth of learning results in appropriate retention of the skills and knowledge and to enhance transferability.

Percentile-based graded assessment and reporting may be required by some jurisdictions in the regulatory environment. Where this is a requirement it will apply to the EKAS component and not the competency standard unit as a whole. RTOs should ensure that assessment is consistent with licensing/registration requirements. The latest information on licensing/registration requirements may be obtained by contacting the relevant Regulator or visiting the Electrical Regulatory Authorities Council (ERAC) website <http://www.erac.gov.au/>

It is preferred that assessing competency occurs in the workplace; however it can be undertaken in a simulated work environment approved for that purpose.

Rules of Evidence

The rules of evidence guide the collection of evidence that address the principles of validity and reliability, guiding the collection of evidence to ensure that it is valid, sufficient, current and authentic.

Valid

Valid evidence must relate directly to the requirements of the unit of competency. In ensuring evidence is valid, assessors must ensure that the evidence collected supports demonstration of the outcomes and performance requirements of the unit of competency together with the knowledge and skills necessary for competent performance. Valid evidence must encapsulate the breadth and depth of the unit of competency, which will necessitate using a number of different assessment methods.

Sufficient

Sufficiency relates to the quality and quantity of evidence assessed. It requires collection of enough appropriate evidence to ensure that all aspects of competency have been satisfied and that competency can be demonstrated repeatedly. Supplementary sources of evidence may be necessary. The specific evidence requirements of each unit of competency provide advice on sufficiency.

Sufficiency of Evidence

In all instances competency is to be attributed on evidence sufficient to show that a person has the necessary skills required for the scope of work. These include:

Task skills – performing individual tasks

Task management skills – managing a number of different tasks

Contingency management skills – responding to irregularities and breakdowns in routines

Job/role environment skills – dealing with the responsibilities and expectations of the work environment including working with others.

Evidence must demonstrate that an individual can perform competently across the specified range of activities and has the essential knowledge, understanding and associated skills underpinning the competency.

Current

In assessment, currency relates to the age of the evidence presented by a candidate to demonstrate that they are still competent. Competency requires demonstration of current performance, so the evidence collected must be from either the present or the very recent past.

Currency of Evidence

Evidence must be relevant to what is outlined in current competency standard units.

Note: The deeming of competence at a point in time does not mean that competence exists for all time; competency must be maintained by use and/or retraining. Refer also to Section 3.9 'Guide to Assessment Methods and Items' for more detailed information on currency.

Recent changes in technology are unlikely to be properly supported by evidence pre-dating the changes. Similarly, if the individual claiming competency has not performed/applied the competency for extensive periods of time, documentary evidence would not be sufficient.

Authentic

To accept evidence as authentic, an assessor must be assured that the evidence presented for assessment is the candidate's own work

Authenticity

Evidence is to be genuine and related to the person being assessed and no one else.

By way of supporting and reinforcing both the concept of competency and the competency standard units as the currency for Vocational Education **and** Training (VET) system, the Electrotechnology Industry embraces the following:

- Assessment (summative or final) is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment.
- Simulation must be in accord with any prevailing industry policy. It is recognised that in some circumstances, assessment may occur outside the workplace; however this should only occur where necessary and must be in accord with industry and regulatory policy. In relation to this Training Package the Industry Skills Council for ElectroComms and EnergyUtilities, EE-Oz Training Standards, has developed an Industry Simulation Policy. This can be accessed from the EE-Oz Training Standards website at: www.ee-oz.com.au.
- All **persons** may claim formal recognition for an assessment of an individual competency standard unit or a group of units.
- All **persons** have the right to have relevant competencies recognised through the most expeditious assessment system and method.
- Under-**represented** groups are not biased from participation and access.

Assessment Requirements of the Australian Quality Training Framework

Assessment leading to nationally recognised AQF qualifications and Statements of Attainment in the vocational education and training sector must meet the requirements of the AQTF as expressed in the AQTF 2010 Essential Standards for Registration.

The AQTF 2010 Essential Standards for Initial and Continuing Registration can be downloaded from <www.training.com.au>.

The following points summarise the assessment requirements.

Registration of Training Organisations

Assessment must be conducted by or on behalf of a Registered Training Organisation (RTO) formally registered by a State/Territory registering/course accrediting body in accordance with the AQTF. The RTO must have the specific competency standard units and/or AQF qualifications on its scope of registration.

The RTO is responsible for all aspects of assessment. The assessment must cover the critical aspects of evidence (assessment) detailed in each unit. In addressing these critical aspects, and maintaining reasonable consistency, the assessment is to ensure that:

- the individual satisfies the requirements in terms of underpinning/essential knowledge and associated skills so that their ability to transfer the competency to differing circumstances may reasonably be inferred
- the individual is competent to safely perform all the practical applications required.

The RTO is also responsible for issuing formal recognition in the form of National Qualifications or Statements of Attainment and, where regulatory requirements apply, providing the required additional information, and, where applicable and preferred by industry, entering relevant information into an individual *Industry Skills Passport* or other industry approved instrument. In discharging these responsibilities the RTO will:

- issue the National Qualification based on individuals having been assessed as competent for the qualification and all the competency standard units which constitute the qualification, **and/or**
- issue formal recognition (Statements of Attainment) in respect of individual or sets of competency standard units for which candidates have been assessed and found competent, **and/or**
- where required for regulated or industry purposes, issue additional formal information as specified by the industry and relevant regulator.

Consistent with the criteria established by State Training Authorities, RTOs are responsible for the implementation of the quality assurance arrangements included in these guidelines.

Quality Training and Assessment

Each RTO must provide quality training and assessment across all its operations. See the AQTF 2010 Essential Standards for Initial and Continuing Registration, Standard 1.

Assessor Competency Requirements

Each person involved in training and assessment must be competent for the functions they perform. See the AQTF 2010 Essential Standards for Initial and Continuing Registration, Standard 1 for assessor (and trainer) competency requirements. See also the AQTF 2010 Users' Guide to the Essential Standards for Registration – Appendix 2.

Assessment Requirements

The RTO assessments, including RPL, must meet the requirements of the relevant endorsed Training Package. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Assessment Strategies

Each RTO must have strategies for training and assessment that meet the requirements of the relevant Training Package or accredited course and are developed in consultation with industry stakeholders. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

National Recognition

Each RTO must recognise the AQF qualifications and Statements of Attainment issued by any other RTO. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*, RTOs may contact the EE-Oz Training Standards as the declared National Industry Skills Council for the ElectroComms and EnergyUtilities Industry, for assistance with national recognition.

Access and Equity and Client Outcomes

Each RTO must adhere to the principles of access and equity and maximise outcomes for its clients. See AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Monitoring Assessments

Training and/or assessment provided on behalf of the RTO must be monitored to ensure that it is in accordance with all aspects of the AQTF 2010 Essential Standards for Initial and Continuing Registration.

Recording Assessment Outcomes

Each RTO must manage records to ensure their accuracy and integrity. See the AQTF 2010 Essential Standards for Initial and Continuing Registration.

Partnership Arrangements

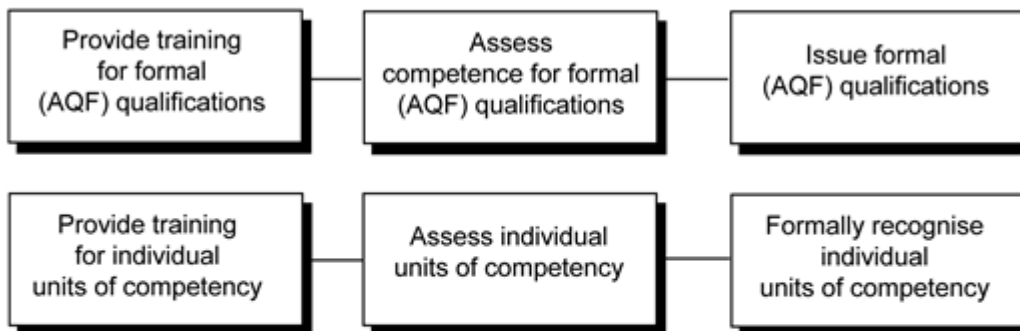
An RTO must have, and comply with, written agreements with each organisation providing training and/or assessment on its behalf.

RTOs operating in partnership with other organisations are responsible for the quality of the partnering organisation services and service outcomes. Under the AQTF, RTOs may enter into partnerships with external and/or non-registered third party organisations, such as schools, industry organisations and enterprises, for delivery and assessment within the RTOs scope of registration.

External and/or non-registered third party organisations do not have to be Registered Training Organisations; however, the agreement must specify how each party to the agreement will discharge its responsibilities for compliance with all aspects of the Standards for Registered Training Organisations.

Roles for Registered Training Organisations

Training and assessment:



Assessment only:



Where the RTO establishes a partnership arrangement it must have a formal agreement with the organisation that provides the training and/or assessment services. This agreement must specify how all parties will discharge their responsibilities for ensuring the quality of the training and/or assessment conducted on its behalf, including the qualification requirements of those to be involved in delivery and assessment. The RTO has full responsibility for the quality and outcomes of any training or assessment conducted on its behalf, and must maintain a register of all such agreements.

Issuing AQF Qualifications and Statements of Attainment

Each RTO must issue AQF qualifications and Statements of Attainment that meet the requirements of the AQF Implementation Handbook and the endorsed Training Packages within the scope of its registration. An AQF qualification is issued once the full requirements for a qualification, as specified in the nationally endorsed Training Package are met. A Statement of Attainment is issued where the individual has completed one or more units of competency from nationally recognised qualification(s)/course(s). See the AQTF and the current edition of the AQF Implementation Handbook - available on the AQFC website www.aqf.edu.au.

Licensing/Registration Requirements

This section provides information on licensing/registration requirements for this Training Package, with the following important disclaimer.

Licensing and registration requirements that apply to specific industries, and vocational education and training, vary between each State and Territory, and can regularly change. The developers of this Training Package consider that the licensing/registration requirements described in this section apply to RTOs, assessors or candidates with respect to this Training Package. While reasonable care has been taken in its preparation, the developers of this Training Package and the Department cannot guarantee that the list is definitive or accurate at the time of reading; the information in this section is provided in good faith on that basis.

Statutory/Regulatory requirements may apply at the qualification, Skill Set or individual unit level. Where a component has a regulatory requirement it is identified in the following sections:

- Competency Standard – Unit Descriptor 1.2) License to practice
- Identified Skill Set – Target Group
- Qualification – Scope

Contact the relevant State or Territory Department(s) to check if the licensing/registration requirements described below still apply, and to check if there are any others with which you must comply. For further information contact:

Current information on national and jurisdictional licensing requirements can be obtained from:

<http://www.licensinglinenews.com/> or the relevant authority in their jurisdiction

State Electrical Regulatory Bodies		
Jurisdiction	Organisation	Website
Australian Capital Territory	ACT Planning and Land Authority	www.actpla.act.gov.au
New South Wales	Office of Fair Trading	www.fairtrading.nsw.gov.au
Northern Territory	Electrical Workers and Contractors Licensing Board	www.electricallicensing.nt.gov.au
Queensland	Department of Employment and Industrial Relations	www.deir.qld.gov.au
South Australia	Office of Consumer and Business Affairs	www.ocba.sa.gov.au
Tasmania	Workplace Standards Tasmania	www.wst.tas.gov.au
Victoria	Energy Safe Victoria	www.esv.vic.gov.au
Western Australia	Department of Consumer and Employment Protection	www.energysafety.wa.gov.au

Statutory Authorities		
Jurisdiction	Organisation	Website
Australia	australia.gov.au	www.australia.gov.au/306
Australian Capital Territory	ACT Legislation Register	www.legislation.act.gov.au
New South Wales	Parliamentary Counsel's Office	www.legislation.nsw.gov.au
Northern Territory	Department of the Chief Minister	www.nt.gov.au/dcm/legislation/current.html
Queensland	Office of the Queensland Parliamentary Counsel	www.legislation.qld.gov.au/oqpchome.htm
South Australia	Parliament of South Australia	www.legislation.sa.gov.au
Tasmania	Tasmanian Legislation	www.thelaw.tas.gov.au/index.w3p
Victoria	Victorian Legislation and	www.legislation.vic.gov.au

	Parliamentary Documents	
Western Australia	State Law Publisher	www.slp.wa.gov.au

Requirements for Assessors

In order to conduct assessment for statutory licensing or other industry registration requirements, assessors must meet the requirements established by regulatory agencies and respective nominees, in addition to the AQTF requirements. Assessors are to liaise with relevant agencies to ensure all requirements are met.

Where regulatory requirements are stated in the relevant sections of a Qualification, Unit or Skill Set, trainers and assessors shall have a current, equivalent licence, registration or permit to work for the jurisdiction in which the training and/or assessment takes place.

Please refer to the bodies listed above for details of jurisdictional regulatory requirements.

Requirements for RTOs

Selected competency standard units and qualifications in this Training Package provide the basis for a range of statutory licensing and industry registration arrangements. To satisfy these licensing and registration arrangements, RTOs are to keep abreast of developments and any additional requirements detailed by those bodies and their nominees. RTOs and their assessors are therefore required to liaise with the Training Package developer and relevant agencies to ensure requirements are known and met.

Requirements for Candidates

Individuals being assessed under statutory licensing and industry registration systems may be required to comply with training and experience requirements additional to any minimum requirements identified in this Training Package. RTOs are to formally advise individuals of these additional requirements prior to the delivery of the Training Package outcomes.

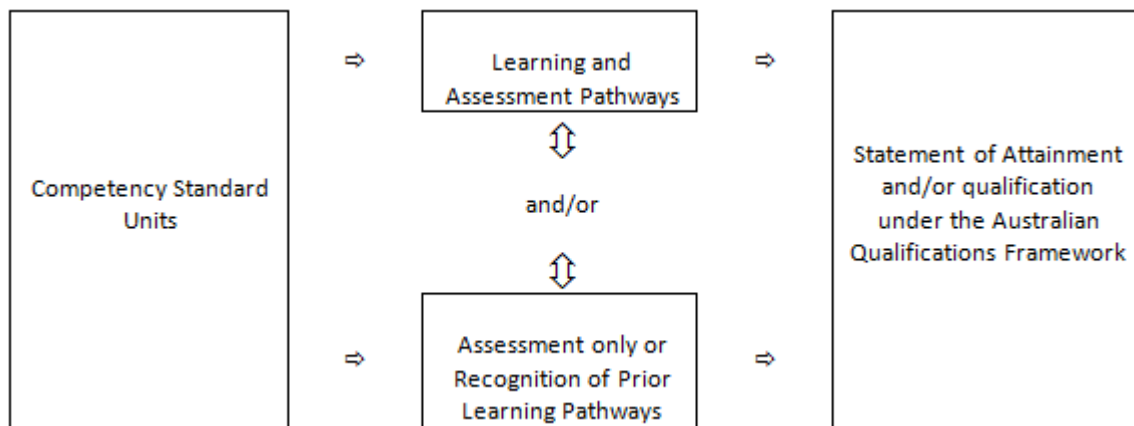
1.3.03 Pathways

3.3 Pathways

The competencies in this Training Package may be attained in a number of ways including through:

- formal or informal education and training
- experiences in the workplace
- general life experience and/or
- any combination of the above.

Assessment under Training Packages leading to an AQF qualification or Statement of Attainment may follow a learning and assessment pathway, an assessment-only or recognition pathway or a combination of the two as illustrated below.



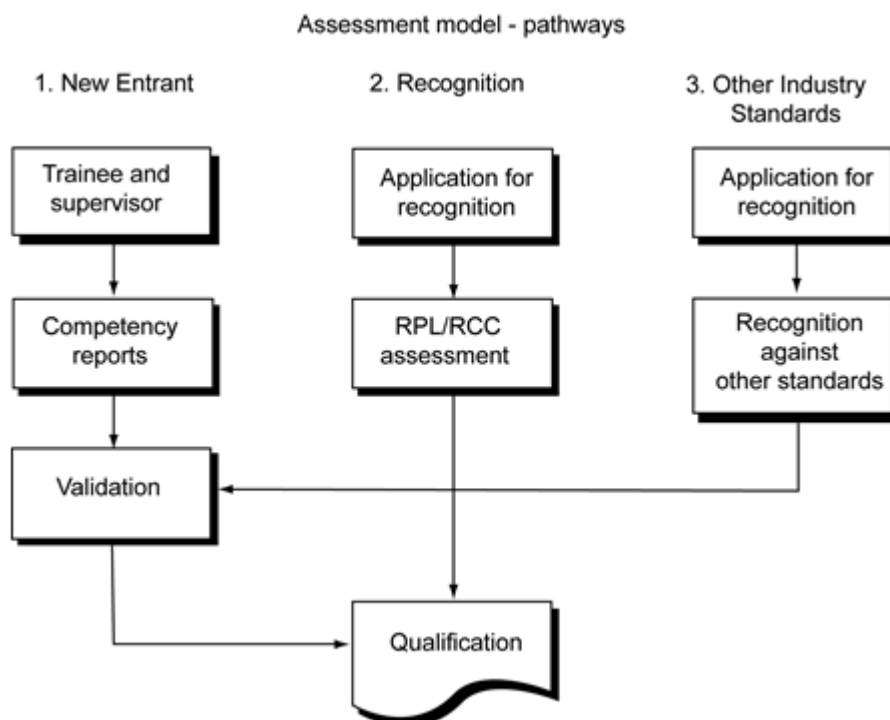
Each of these assessment pathways leads to full recognition of competencies held – the critical issue is that the candidate is competent, not how the competency was acquired. Assessment, by any pathway, must comply with the assessment requirements set out in the Assessment Guidelines of the Training Package and the AQTF.

Within the general Training Package Pathways framework three distinct Assessment Pathways have been identified for use within the Electrotechnology Industry.

Pathway 1: New entrant competency development

Pathway 2: Recognition of currently held competencies or prior learning and workplace experience

Pathway 3: Recognition of other currently held competencies (other industry standards)



Although not exclusive, the three pathways provide typical recognition processes for individual competency standard units or groups of units that make up Qualifications or Statements of Attainment.

Pathway 1: New Entrant Competency Development

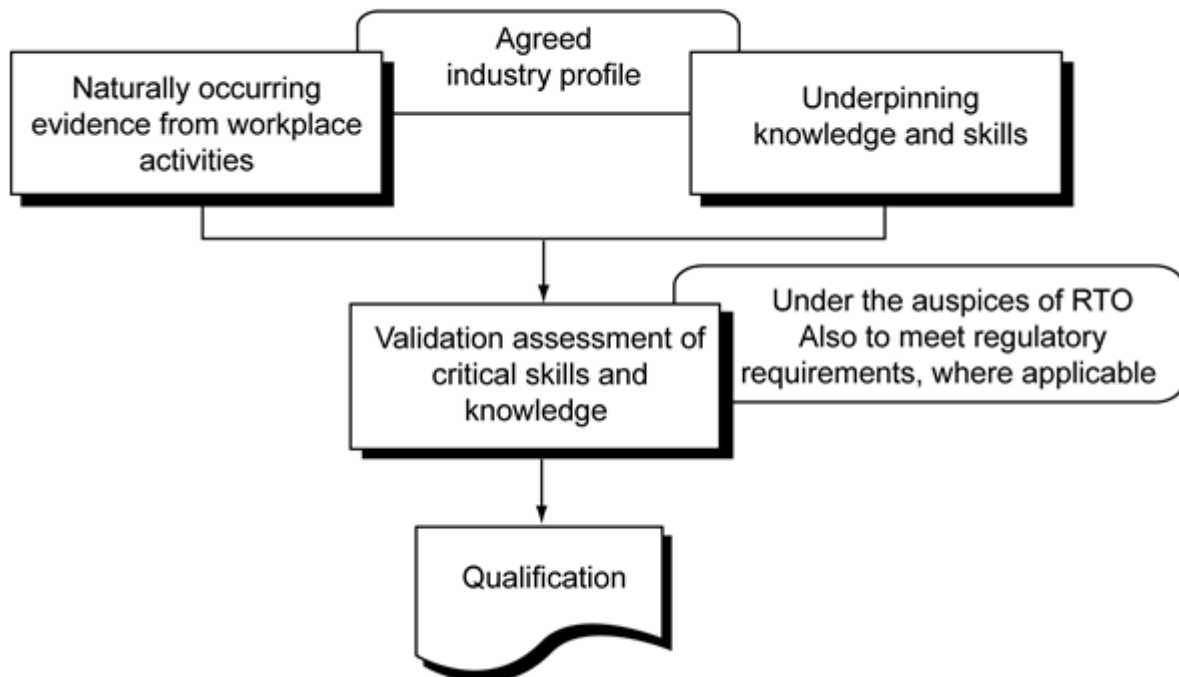
This pathway is for individuals who are undertaking an industry-preferred competency development plan. The users of this pathway may be:

- contracted employment based employees who are generally Australian Apprentices and who undertake an approved training program that supports a competency development plan, **or**
- those who undertake an approved structured training program in an institutional environment to achieve competency outcomes.

Evidence of Competency

In Pathway 1 evidence required to determine competence for the issuance of the qualification or Statement of Attainment is to be in accordance with the later section **3.4 Assessment principles within the Electrotechnology Industry**. The evidence however, must be sufficient in quality, quantity and type and be gathered in an on-going basis in a timely and accurate manner from several sources, such as, workplace and educational experiences based on the approved industry training program and related competency development plan in which individuals are involved.

Pathway 1. Evidence of competency (New entrant)



Pathway 2: Recognition of prior learning/current competencies (RPL/RCC)

This pathway is for those who may have acquired skills and knowledge in relevant competency standard units outside formally recognised processes. The users of this pathway will include applicants from overseas and also applicants who have developed skills in allied industries but who have no formal recognition in respect of industry standards or qualifications. In using this pathway RTOs should also identify if any equivalence mapping document exists as per Pathway 3.

An existing national mechanism for recognition as a tradesperson exists under the *Tradesmen's Rights Regulation Act*, which is administered by *Trades Recognition Australia (TRA)* – part of the *Commonwealth Department of Industrial Relations*. TRA grants recognition for the purposes of migration but further analysis of the applicant's knowledge and skills is often needed before competency can be attributed.

The TRA process mainly operates to provide formal recognition of the knowledge and skills migrants possess as a result of structured training and/or work experience in overseas countries. However, it is also an important mechanism for the assessment and recognition of the competencies of those who may not have had access to the industry-preferred new entrant model of competency development for trade vocations in Australia. For further information on these requirements visit:

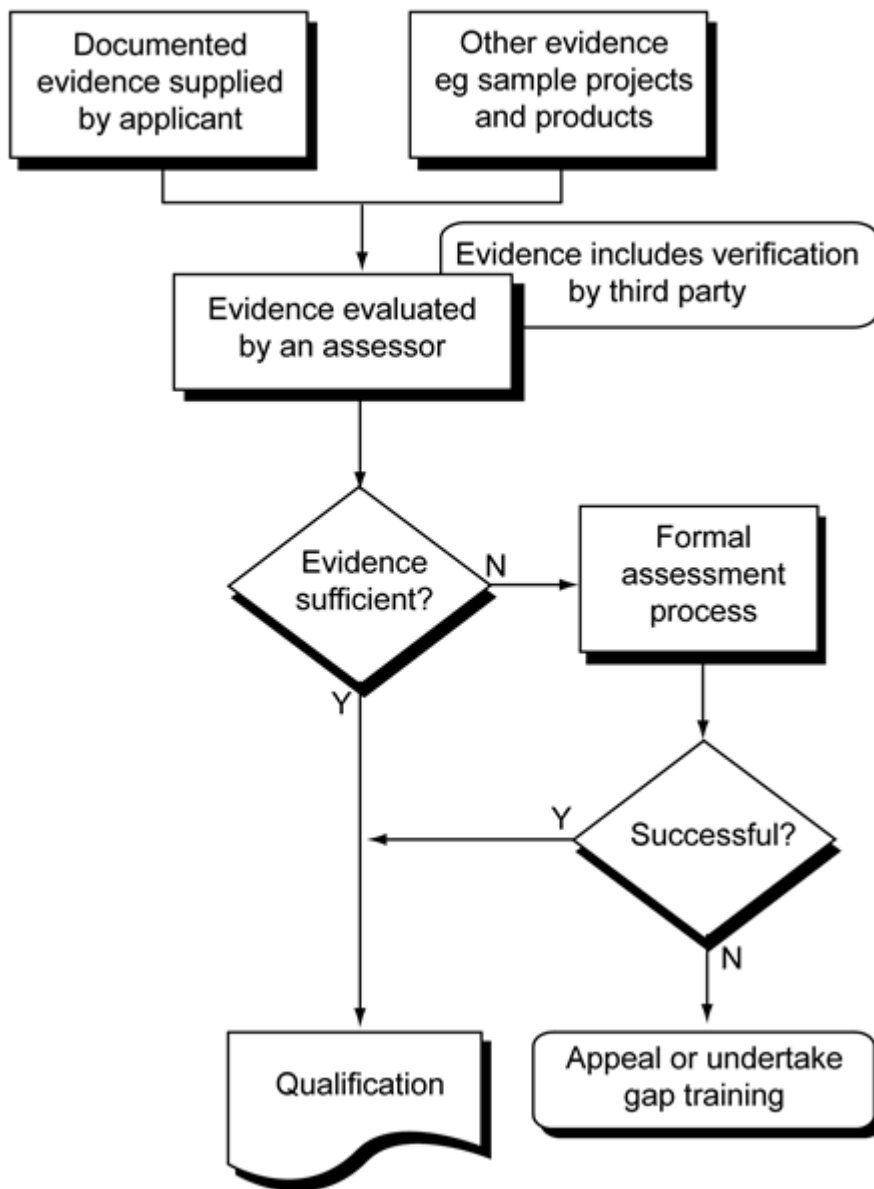
<http://www.workplace.gov.au/workplace/Category/SchemesInitiatives/TRA/TRA-TradeClassificationsAssessed.htm>

Evidence of Competency

In Pathway 2 many types of evidence can be used to determine competency for the issuance of qualifications or Statements of Attainment. The evidence may come from records of previous relevant work experience. This type of evidence will need endorsement by a supervisor/mentor skilled in the units for which recognition is sought. Evidence may consist of portfolios such as projects or products completed for other purposes, or from non-registered training programs or ad hoc prior experience, or from overseas programs of a similar nature.

Industry would expect this evidence to be assessed by the RTO (or its nominee – a qualified industry assessor). The result will be that the applicant is judged competent for the competency standard unit(s) or gaps are identified and noted. Where a gap is identified, the applicant can either accept the judgement and pursue gap training or elect to appeal the decision. Evidence used in the appeal process may include a personal portfolio, relevant work history, interview, comments by peers or employers, and challenge tests.

Pathway 2. Recognition (RPL/RCC)

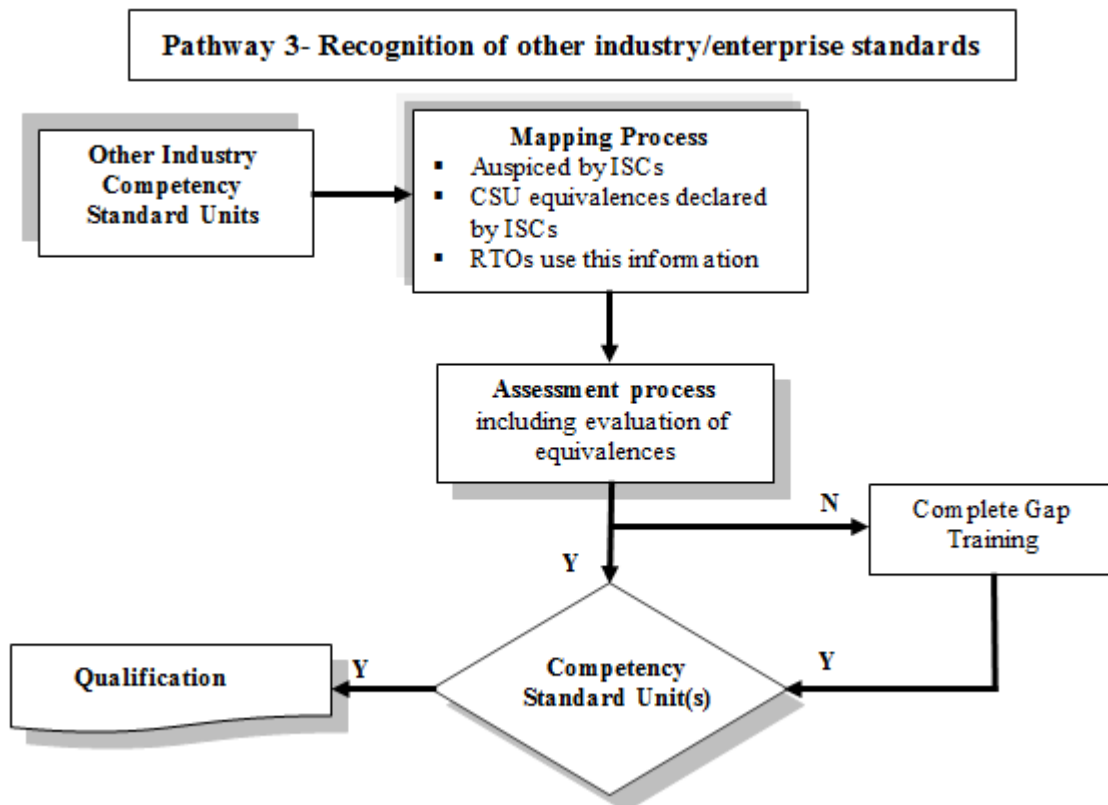


Pathway 3: Recognition of Other Industry/Enterprise Standards

This pathway is for individuals who have developed skills based on other nationally recognised industry or enterprise competency standards and who have received formal recognition in competency standard unit(s) from these areas. Recognition of equivalence of competency standard units between industries is through an agreed and formal mapping process. Equivalence of outcomes is declared by Industry Skills Councils for the relevant Training Packages. The recognition of units, as part of any mapping arrangements is the responsibility of the parties maintaining those competency standards. RTOs should investigate whether any mapping agreements are in place by contacting the relevant Industry Skills Councils.

Evidence of Competency

The applicant is required to supply details of the unit(s) held, their currency, and the unit(s) sought. This includes submitting any assessment reports to the RTO for a determination. This evidence will be reviewed against the mapping advice obtained by the RTO (or their nominee) and a judgement made. The result will be that the applicant is deemed competent for the unit(s) and a Statement of Attainment issued, or gaps are identified, advised and noted. Where a gap has been identified the applicant can consider the judgement and either pursue gap training or appeal the decision. Evidence used in the appeal process is based on the individual’s records of achievement relative to the competency standard units for which recognition is sought.



Learning and Assessment Pathways

New Entrants

Usually, learning and assessment are integrated, with assessment evidence being collected and feedback provided to the candidate at any time throughout the learning and assessment process.

Learning and assessment pathways may include structured programs in a variety of contexts using a range of strategies to meet different learner needs. Structured learning and assessment programs could be group-based, work-based, project-based, self-paced, action learning-based; conducted by distance or e-learning; and/or involve practice and experience in the workplace. Learning and assessment pathways to suit Australian Apprenticeships have a mix of formal training and structured workplace experience with formative assessment activities through which candidates can acquire and demonstrate skills and knowledge from the relevant units of competency.

The pathway must take into account:

- irregular work activity
- work availability as it effects access to the range of activities required to be covered
- structured formative assessment activities which demonstrate to the candidate and assessor the current strengths and weaknesses of the candidate
- summative assessments for the purpose of deeming competence

The model that best accommodates a new entrant with no prior experience is one that recognises that learning is best facilitated in a structured educational program with directed workplace activities followed by recurring practice of these activities. That is, the model is based on a combination of on-the-job and off-the-job learning experiences aligned to competency standard unit requirements. It recognises that learning occurs in an active way and should involve appropriate learning strategies. The model provides coherence and integration between respective components. It also represents a:

- most effective and efficient means of effecting quality education and training
- means of assessing if learning has occurred and competence has been attained.

Competency standard units are specifications of work performance but they do not specify how training or assessment activities are to be carried out. Given the nature of the information contained within the competency standard units (content and its interrelationships) there is the potential for a variety of interpretations to occur when RTOs are designing training programs. To improve opportunities for consistency in interpretation the industry preferred approach is to support the use of appropriate learning and assessment strategies. To this end it has developed a Guideline Training and Assessment Model detailing the preferred approach. A copy of the model is available from EE-Oz Training Standards.

Credit Pathways

Credit is the value assigned for the recognition of equivalence in content between different types of learning and/or qualifications which reduces the volume of learning required to achieve a qualification.

Credit arrangements must be offered by all RTOs that offer Training Package qualifications. Each RTO must have a systematic institutional approach with clear, accessible and transparent policies and procedures.

Competencies already held by individuals can be formally assessed against the competency standard units in this Training Package and should be recognised regardless of how, when or where they were achieved.

Recognition of Prior Learning

Recognition of Prior Learning (RPL) is an assessment process which determines the credit outcomes of an individual application for credit.

The availability of Recognition of Prior Learning (RPL) provides all potential learners with access to credit opportunities.

The recognition of prior learning pathway is appropriate for candidates who have previously attained skills and knowledge and who, when enrolling in qualifications, seek to shorten the duration of their training and either continue or commence working. This may include the following groups of people:

- existing workers;
- individuals with overseas qualifications;
- recent migrants with established work histories;
- people returning to the workplace; and
- people with disabilities or injuries requiring a change in career.

As with all assessment, RPL assessment should be undertaken by academic or teaching staff with expertise in the subject, content of skills area, as well as knowledge of and expertise in RPL assessment policies and procedures.

Assessment methods used for RPL should provide a range of ways for individuals to demonstrate that they have met the required outcomes and can be granted credit. These might include:

- questioning (oral or written)
- consideration of a portfolio and review of contents
- consideration of third party reports and/or other documentation such as documentation such as articles, reports, project material, papers, testimonials or other products prepared by the RPL applicant that relate to the learning outcomes of the relevant qualification component
- mapping of learning outcomes from prior formal or non-formal learning to the relevant qualification components
- observation of performance, and
- participation in structured assessment activities the individual would normally be required to undertake if they were enrolled in the qualification component/s.

In a Recognition of Prior Learning (RPL) pathway, the candidate provides current, quality evidence of their competency against the relevant unit of competency. This process may be directed by the candidate and verified by the assessor. Where the outcomes of this process indicate that the candidate is competent, structured training is not required. The RPL requirements of the AQTF must be met.

As with all assessment, the assessor must be confident that the evidence indicates that the candidate is currently competent against the endorsed unit of competency. This evidence may take a variety of forms and might include certification, references from past employers, testimonials from clients, work samples and/or observation of the candidate. The onus is on candidates to provide sufficient evidence to satisfy assessors that they currently hold the relevant competencies. In judging evidence, the assessor must ensure that the evidence of prior learning is:

- authentic (the candidate's own work);
- valid (directly related to the current version of the relevant endorsed unit of competency);
- reliable (shows that the candidate consistently meets the endorsed unit of competency);
- current (reflects the candidate's current capacity to perform the aspect of the work covered by the endorsed unit of competency); and
- sufficient (covers the full range of elements in the relevant unit of competency and addresses the four dimensions of competency, namely task skills, task management skills, contingency management skills, and job/role environment skills).

Credit Transfer

Credit transfer is a process which provides learners with agreed and consistent credit outcomes based on equivalences in content between matched qualifications.

This process involves education institutions:

mapping, comparing and evaluating the extent to which the defined learning outcomes and assessment requirements of the individual components of one qualification are equivalent to the learning outcomes and assessment requirements of the individual components of another qualification

making an educational judgment of the credit outcomes to be assigned between the matched components of the two qualifications setting out the agreed credit outcomes in a documented arrangement or agreement, and publicising the arrangement/agreement and credit available.

Assessment-only Pathway or Recognition of Prior Learning Pathway

In some circumstances an assessment-only (skills recognition) pathway will be warranted.

The candidate provides current, quality evidence against the relevant unit of competency.

In an assessment-only or Recognition of Prior Learning (RPL) pathway, the candidate provides current, quality evidence of their competency. This process may be directed by the candidate and verified by the assessor, such as in the compilation of portfolios; or directed by the assessor, such as through observation of workplace performance and skills application, and oral and/or written assessment. Where the outcomes of this process indicate that the candidate is competent, structured training is not required. The RPL requirements of the AQTF must be met (Standard 1).

As with all assessment, the assessor must be confident that the evidence indicates that the candidate is currently competent against the endorsed competency standard unit(s). This evidence may take a variety of forms and might include certification, Industry Skills Council equivalence mapping declarations, references from past employers, testimonials from clients and work samples. The onus is on candidates to provide sufficient evidence to satisfy assessors that they currently hold the relevant competencies. In judging evidence, the assessor must ensure that the evidence is:

- authentic (the candidate's own work)
- valid (directly related to the current version of the relevant endorsed Competency Standard Unit)
- reliable (a range of test instruments will provide the same result for a given candidate)
- current (reflect the candidate's current capacity to perform the aspect of the work covered by the endorsed competency standard unit), and
- sufficient (covers the full range of Elements and Performance Criteria in the relevant competency standard unit and addresses the four dimensions of competency, namely task skills, task management skills, con tangency management skills, and job/role environment skills).

An assessment-only or recognition of prior learning pathway is likely to be most appropriate for:

- candidates participating/enrolling in qualifications who want recognition for prior learning of current competencies
- existing workers
- individuals with overseas qualifications
- recent migrants with established work histories
- people returning to the workplace
- people with disabilities or injuries requiring a change in career
- people with existing competencies from allied industry Training Packages.

Note: The pathways listed above are only suggested and should not be used to limit a greater range of candidates seeking assessment.

Combination of 'Training and Assessment' and 'Assessment-only' Pathways

Credit may be awarded on the basis of a combination of credit transfer plus an individual RPL assessment for additional learning. Once credit has been awarded on the basis of RPL, subsequent credit transfer based on these learning outcomes should not include revisiting the RPL assessment but should be based on credit transfer or articulation or other arrangements between providers.

Where candidates for assessment have gained competencies through work and life experience and gaps in their competence are identified, or where they require training in new areas, a combination of approaches may be appropriate.

In such situations, the candidate may undertake an initial assessment to determine their current competence. Once current competence is identified, a structured training and assessment program ensures that the candidate acquires the required additional competencies identified as gaps. These would be achieved through a 'training and assessment pathway'.

1.3.05 Assessment Processes in the Electrotechnology Industry

3.5 Assessment Processes in the Electrotechnology Industry

Within the Electrotechnology Industry **sampling**, **profiling** and **portfolio** are recognised as the three main methods of collecting evidence to assist the assessment processes and, while they are not mandatory, they have become accepted and the preferred industry practice. These guidelines do not provide an extensive technical description of each of these methods; however, it is important to recognise the impact each will have on the management of assessment practices. An overview of each is provided below along with sample templates to assist RTOs in planning, managing and administering training and assessment delivery.

1. Sampling

Sampling requires that evidence of competence be derived from a sample of performances. Application skills are normally assessed by practical measures and knowledge underpinning performance is typically assessed in learning environments such as classrooms, by conventional written or oral questioning.

2. Profiling

Profiling requires the progressive recording of many samples through structured documentation. Progressive monitoring of evidence over an extended period of time is used to guide future experience and making judgements about the developing competency profile of the candidate/learner. The focus of evidence collection is set against the Elements, Range Statement and critical aspects detailed in the competency standard units and are further refined by the level of supervision experienced. The evidence collection process is staged against known and pre-defined work performance outcomes as specified in the competency standard units.

Profiling will assist in obtaining a series of periodical audit assessments and/or a final holistic assessment event when necessary. Technical educational achievements may be incorporated in the profiling model to augment information gathered directly from the workplace.

Profiling using an ElectroComms and Energy Utilities ISC approved system is the industry model for the collection of workplace performance evidence for those undertaking licenced qualifications.

3. Portfolio

The Portfolio approach is best suited to assessment conducted as Recognition of Prior Learning (RPL) and is to be in accord with the current AQTF Standards for RTOs or its replacement/equivalent. It requires the collection or build-up of indirect evidence as to an individual's competence.

The portfolio of evidence could include Statements of Attainment issued by other RTOs (Mutual Recognition AQTF Standard), suitably focused references and testimonials, formal project appraisals, work records and any other evidence which is current and relevant to the competencies sought.

Opportunities for Combined Approaches

The assessment approaches/processes described above may be implemented in combination. The assessment process selected will be acceptable to the industry if:

- the outcome is valid
- the approach supports industry-wide consistency
- the requirements of the competency standard units are satisfied in accordance with the industry expectations
- costs are acceptable to the industry.

1.3.06 Assessor Requirements

3.6 Assessor Requirements

This section identifies the specific requirements on the vocational competence and experience for assessors, to ensure that they meet the needs of industry and their obligations under AQTF, and clarifies how others may contribute to the assessment process where one person alone does not hold all the required competencies.

In such situations, the trainer/assessor candidate may undertake an initial assessment to determine their current competency. Once current competency is identified, a structured learning and assessment program ensures that the candidate acquires the required additional competencies identified as gaps.

The integrity of the Electrotechnology Industry assessment processes is centred on the need for all assessments to be conducted under the direction or the authority of an RTO using qualified assessors who may function with or within the RTO.

The responsibility for some activities may be delegated. For example, in a long term profiling process the qualified assessor may establish the system and identify the evidence to be captured by an industry approved system. Although the evidence is gathered by others the assessor will examine the evidence and make judgments.

Whatever forms of evidence and evidence gathering are used the RTO has full responsibility for the judgements in deeming competence.

Assessor Competencies

The AQTF specifies mandatory competency requirements for assessors. For information, Element 1.4 from the AQTF 2007 Essential Standards for Registration follows:

- 1.4 Training and assessment are conducted by trainers and assessors who:
- a) have the necessary training and assessment competencies as determined by the National Quality Council or its successors, and
 - b) have the relevant vocational competencies at least to the level being delivered or assessed, and
 - c) can demonstrate current industry skills directly relevant to the training/assessment being undertaken, and
 - d) continue to develop their Vocational Education and Training (VET) knowledge and skills as well as their industry currency and trainer/assessor competence.

* See AQTF 2010 *Users' Guide to the Essential Standards for Registration* – Appendix 2

In this Training Package, assessments against the competencies will be carried out in accordance with the endorsed guidelines. The guidelines include the necessary qualifications for those conducting assessments and provide for those situations where more than one person may contribute to the assessment as occurs when the required technical and assessment competencies are not held by any one person.

Assessors are to be competent in the competencies which they are to assess or are to be assisted by an appropriate subject matter expert who is currently competent in the unit being assessed. This includes language literacy and numeracy (LLN), cultural diversity and under-represented groups, environmental and industrial safety and occupational health and safety (OHS).

Assessors (and their subject matter expert) must know current industry practices for the job or the role against which the performance is being assessed, and must practise the necessary interpersonal skills required in the assessment process.

All persons required to *plan, assess, develop or validate* assessment related matters must be currently competent against the competency standard(s) contained in the Training and Assessment Training Package, and comply with the AQTF Standards for RTOs and comply with the relevant industry vocational competencies.

Using Qualified Assessors

All assessment is to be under the authority of a formally qualified assessor. Within this constraint, the RTO may employ any or all of the following:

- a workplace assessor who is currently competent against the assessor competency standards contained within the Training and Assessment Training Package and the relevant industry vocational competencies.
- a workplace assessor who is currently competent against the assessor competency standards contained within the Training and Assessment Training Package and who has ready access to another person who is competent in, and can advise the assessor on the relevant vocational competencies to at least the level being assessed.
- an assessment panel that includes at least one person who is currently competent against the assessor competency standards contained within the Training and Assessment Training Package as well as at least one person who is competent in the relevant vocational competencies to at least the level being assessed.
- an external assessor who is currently competent against the assessor standards contained within the Training and Assessment Training Package but with the assessment evidence being collected, by a workplace supervisor who has the relevant vocational competencies to at least the level being assessed and is using industry endorsed assessment procedures.
- a workplace supervisor, with the relevant vocational competencies to at least the level being assessed, who uses industry endorsed assessment procedures with the outcome being validated by an externally qualified assessor who is currently competent against the assessor standards contained within the Training and Assessment Training Package.

In relation to the new entrant pathway industry would expect that in all instances the RTO will retain the responsibility of managing the competency development training program and related plan, the ultimate attributing of competence against competency standard units using qualified assessors, and the issuing of qualifications, and/or Statements of Attainment. It will also include providing any additional information that may be required for licensing requirements and specified by regulators or industry.

The process should be undertaken in accordance with the recognition processes defined by relevant training authorities.

Assessor Competencies

The AQTF specifies mandatory competency requirements for assessors. For information, see the AQTF *Essential Standards for Initial and Continuing Registration*. follows:

"1.4 Training and assessments is delivered by trainers and assessors who:

- a) *have the necessary training and assessment competencies as determined by the National Quality Council or its successors*
- b) *have the relevant vocational competencies at least to the level being delivered or assessed and*
- c) *can demonstrate current industry skills directly relevant to the training/assessment being undertaken, and*
- d) *continue developing their Vocational Education and Training knowledge and skills as well as their industry currency and trainers/assessor competence."*

The Determination of the National Quality Council 18 December 2009 regarding Training and Assessment competencies to be held by Trainers and Assessors appendix 3 to the AQTF *User Guide for Initial Registration* specifies mandatory competency requirements for Trainers and Assessors:

Trainers must:

- i) hold the Certificate IV in Training and Assessment (TAA40104) from the Training and Assessment Training Package; or
- ii) be able to demonstrate equivalent competencies; or
- iii) hold the Certificate IV in Assessment and Workplace Training from the superseded Training Package for Assessment and Workplace Training (BSZ98), or
- iv) be able to demonstrate that prior to 23 November 2005 they had been assessed as holding equivalent competencies to the Certificate IV in Assessment and Workplace Training from the Training Package for Assessment and Workplace Training (BSZ98); or
- v) work under the direct supervision* of a person who has the competencies specified in (i) or (ii) or (iii) or (iv) above; and

be able to demonstrate vocational competencies at least to the level of those being delivered.

Note: Direct supervision is achieved when a person delivering training on behalf of the RTO has regular guidance, support and direction from a person designated by the RTO who has the trainer competencies in (i), (ii), (iii) or (iv) above and who monitors and is accountable for the training delivery. It is not necessary for the supervising person to be present during all training delivery.

All assessors who are engaged in assessing against this Training Package must be engaged by an RTO, or be acting under the registration of an RTO (for example, an assessor working in an enterprise, or as a consultant, that has a partnership arrangement with the RTO).

Assessors must:

i) hold the following three competencies from the Training and Assessment Training Package (TAA04):

- (a) TAAASS401A Plan and organise assessment
- (b) TAAASS402A Assess competence
- (c) TAAASS404A Participate in assessment validation; or

ii) be able to demonstrate equivalent competencies to all three units of competency listed in (i); or

iii) hold the following competencies from the superseded Training Package for Assessment and

Workplace Training (BSZ98):

- BSZ401A Plan assessment,
- BSZ402A Conduct assessment, and
- BSZ403A Review assessment; or

iv) be able to demonstrate that prior to 23 November 2005 they had been assessed as holding equivalent competencies to all three units of competency listed in (iii) above.

Note: If a person does not have the assessment competencies as defined in (i) (ii), (iii) or (iv) above and the relevant vocational competencies at least to the level being assessed, one person with all the assessment competencies listed in (i) (ii), (iii) or (iv) above and one or more persons who have the relevant vocational competencies at least to the level being assessed may work together to conduct the assessments.

Vocational competency

Vocational competency is defined as broad industry knowledge and experience, usually combined with a relevant industry qualification. A person who has vocational competency will be familiar with the content of the vocation and will have relevant current experience in the industry. Vocational competency must be considered on an industry-by-industry basis and with reference to the guidance provided in the Assessment Guidelines of the relevant Training Package.

Training Packages include advice specific to the industry related to the vocational competencies of assessors. This may include advice on relevant industry qualifications and experience required for assessing against the Training Package or for specific qualifications within the package. The Training Package will also provide specific industry advice outlining what it sees as acceptable forms of evidence to demonstrate the maintenance of currency of vocational competency.

This Training Package provides a range of options for meeting these assessor requirements. Assessments can be undertaken in a variety of workplace and enterprise contexts by individual assessors; partnerships involving assessors and technical experts; and teams of assessors.

The options below show how the requirement to use qualified assessors can be met.

Assessors, Technical Experts and Workplace Supervisors

Single assessor – Single arrangement

Where an individual assessor conducts the assessment, the assessor is required to:

- hold formal recognition of competence in the relevant units in the Training Package for Training and Assessment
- be deemed competent and, where possible, hold formal recognition of competence in the specific competency standard units in this Training Package, at least to the level being assessed.

In addition, it is recommended by the industry that the assessor can:

- demonstrate current knowledge of the Electrotechnology Industry, industry practices, and the job or role against which performance is being assessed
- demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts
- demonstrate the necessary interpersonal and communication skills required in the assessment process
- continue to meet the requirements of the industry
- ensure assessment is consistent with the Australian Quality Training Framework Standards for Registered Training Organisations
- promote confidence in the system and the assessment outcomes on the part of industry, employers, enterprises, unions, employees, trainees, assessors and trainers
- ensure assessment processes and outcomes are valid, reliable, fair and flexible
- support RTOs in effectively carrying out their responsibilities
- participate in professional development
- have relevant work experience
- participate in professional/industry networks and assessor programs
- have recent planning and review of assessment activities
- participate in assessment validation processes
- have recent assessment and/or workplace training activities.

Partnership arrangements

Option 1 – Working with a Technical Expert

An assessor works with a technical expert to conduct the assessment. The assessor is required to hold formal recognition of competence in the relevant units in the Training Package for Training and Assessment.

In addition, it is recommended that the assessor is able to:

- demonstrate current knowledge and skill in assessing against this Training Package which contains the vocational standards for industry in a range of contexts
- demonstrate capability to assess with a technical expert

- demonstrate the interpersonal and communication skills required in the assessment process.

A technical expert is someone who is deemed currently competent and, where possible, holds formal recognition of competence in the specific competency standard units from this Training Package, at least to the level being assessed.

In addition, it is recommended that the technical expert is able to:

- demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed
- communicate and liaise with the assessor throughout the assessment process.

Option 2 – Working with a Workplace Supervisor

An assessor works with workplace supervisor in collecting evidence for valid assessment.

An assessor is required to:

- hold formal recognition of competence in training and assessment in the relevant units in the Training and Assessment Training Package
- make the assessment decision.

In addition, it is recommended that the assessor is able to:

- demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts
- demonstrate a capability to assess using a workplace supervisor as a valid and reliable source of evidence collaboration
- demonstrate interpersonal and communication skills required in the assessment process
- communicate and liaise, where appropriate, with the workplace supervisor throughout the assessment process.

A workplace supervisor is someone who is deemed currently competent and, where possible, holds formal recognition of competence in the specific competency standard units from this Training Package, at least to the level being assessed.

In addition, it is recommended that the workplace supervisor is able to:

- demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed
- communicate and liaise, where appropriate, with the assessor throughout the assessment process
- use agreed practices to gather and record evidence for the assessor to use in making a valid judgement on competency.

Team/Panel Assessment

The members of an assessment team/panel have assessment and industry experience and expertise and they work together to conduct the assessment. This involves collecting evidence and making judgements about competency. The members of the team must include at least one person who:

- holds formal recognition of competence in training and assessment in the relevant units in the Training and Assessment Training Package

- is deemed competent and, where possible, holds formal recognition of competence in the specific competency standard units under assessment, at least to the level being assessed; and if not technically competent uses team/panel members with current technical competence in requisite units.

In addition, it is recommended that members of the team/panel involved in the assessment are able to demonstrate:

- current knowledge of the industry, industry practices, and the job or role against which performance is being assessed
- current knowledge and skill in assessing against this Training Package in a range of contexts
- the interpersonal and communication skills required in the assessment process and to liaise with other team/panel members throughout the assessment process.

Assessments against the competencies in the Training Package will be carried out in accordance with these endorsed guidelines. The guidelines include the necessary qualifications for those conducting assessments and provide for those situations where more than one person may contribute to the assessment and where the required technical and assessment competencies may not be held by any one person.

1.3.07 Designing Assessment Tools

3.7 Designing Assessment Tools

This section provides an overview on the use and development of assessment tools.

Use of Assessment Tools

Assessment tools provide a means of collecting the evidence that assessors use in making judgements about whether candidates have achieved competency.

There is no set format or process for the design, production or development of assessment tools. Assessors may use prepared assessment tools, such as those specifically developed to support this Training Package – Training and Assessment Advice Manual for the Electrotechnology Training Package, available from EE-Oz Training Standards. Visit the website: (www.ee-oz.com.au). Alternatively they may develop their own assessment materials to meet the needs of their clients by utilising pre-developed training and assessment instruments included in Section 3.8 Electrotechnology Industry Guidelines for designing assessment materials.

Using Prepared Assessment Tools

If using prepared assessment tools, assessors should ensure that these tools are benchmarked or mapped against the current version of the relevant competency standard unit(s) and any industry-preferred model, and supported by the industry. This can be done by checking that the materials are listed on the National Training Information Service (<http://www.ntis.gov.au>) or EE-Oz Training Standards (www.ee-oz.com.au). Materials on the list have been noted by the National Quality Council (NQC), as meeting the quality criteria for Training Packages support materials.

Developing Assessment Tools

When developing their own assessment tools, assessors must ensure that the tools:

- are benchmarked against the relevant unit or units of competency;
- are reviewed as part of the validation of assessment strategies required under the AQTF; and
- meet the assessment requirements expressed in the AQTF 2010 Essential Standards for Initial and Continuing Registration.

A key reference for assessors developing assessment tools is TAE10 Training and Education Training Package.

Language, Literacy and Numeracy

The design of assessment tools must reflect the language, literacy and numeracy competencies required for the performance of a task in the workplace and not exceed these expectations

1.3.08 Assessment Methods

3.8 Assessment Methods

Assessment methods must be appropriate to the situation. Learners can be encouraged to use these methods for self-assessment. Combinations of these methods will be required for most situations, e.g. observations and oral questioning.

The recommended assessment methods for collecting evidence required to determine the candidate's competency are:

- oral questioning
- structured observation of work
- indirect supporting evidence (supervisor's reports)

It is recommended that assessors use open questions in conjunction with direct observations to assess the candidate's ability to:

- apply relevant knowledge to the particular task
- perform the required tasks safely and efficiently
- handle unforeseen contingencies and circumstances
- recognise and solve problems associated with the whole job (which may not necessarily occur during the assessment).

Supervisor's reports or verified calculations should be used to confirm that workplace job activities have been completed on time and meet the required specifications. This is particularly relevant when the assessor may not be present for the total duration of the workplace job activity and/or the learner/candidate works as part of a team.

For more information see Section 3.10 Guide to assessment methods and items.

Direct observation. Observe the learner carrying out their usual practical tasks in the workplace. This may be accompanied by questions. Direct observation is probably the easiest and most convenient method of assessment.

Third party reports. Information is provided by the immediate supervisor or other appropriate person(s). An external assessor may not have the opportunity to make multiple observations of a candidate over a period of time, unlike an internal (in-house) assessor. The external assessor may obtain third party reports to supplement an assessment.

Demonstration and questioning. If there is no opportunity to observe this competency in the standard work environment, the assessor may ask the candidate to provide a practical demonstration. The assessor can see both the process and the finished product.

Pen and paper tests and essays. These are used to measure the extent of knowledge and/or problem-solving capability. They can complement practical demonstration.

Oral tests. These can be an adjunct to practical demonstration and pen and paper tests.

Projects. These are usually unsupervised. The assessor uses the final product and supervisor reports as a basis for judgement.

Simulation. This may involve an off-site practical test. The actual tasks and conditions are similar to real life situations and are in accord with prevailing industry policy enunciated by the Industry Skills Council. A Simulation Policy has been developed and can be obtained at www.ee-oz.com.

Portfolios. These are used for assessing skills achieved in the past. They can include work samples.

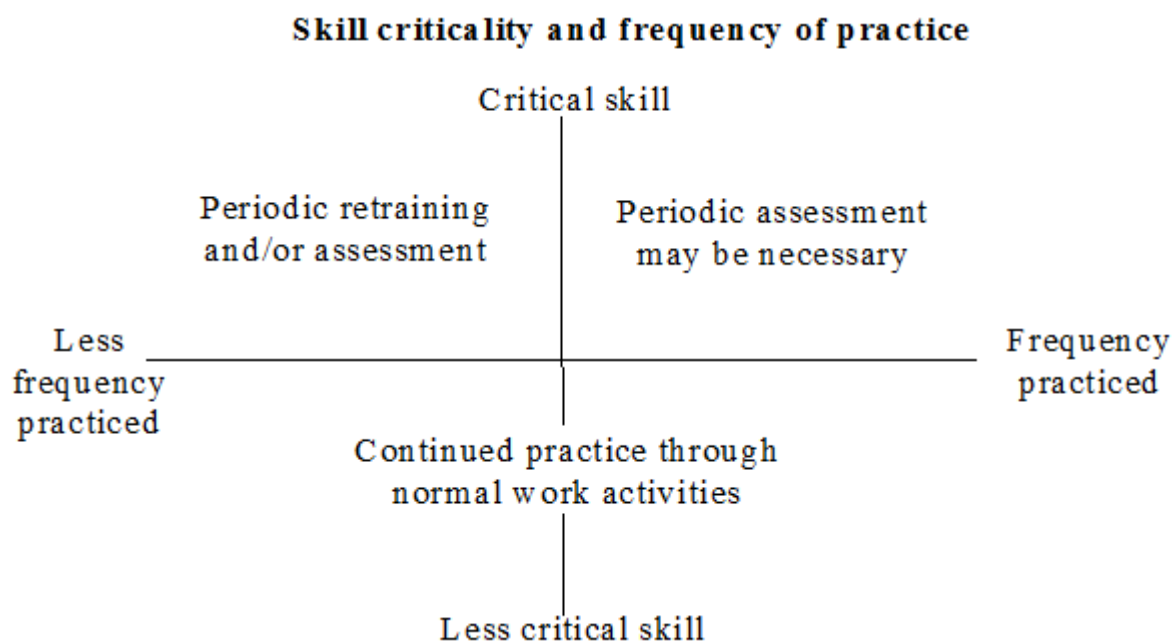
Profiling. Information is gathered over time from a structured profiled data entry card, log book or electronic system.

Selecting assessment methods is influenced by factors such as: the extent of the assessment, the most effective locations, access to physical resources and safety measures required.

Sources of evidence need to be as comprehensive as possible in order to minimise error in judgment. Activities associated with normal everyday work contribute to the ‘richness’ of the evidence data.

When choosing an assessment method and developing assessment instruments, assessors must take into consideration that some knowledge and some skills are more critical to safety and operational requirements than others and some skills are practised more/less frequently.

These considerations can be summarised as follows:



Assessment methods and instruments used should satisfy the conditions associated with sufficiency, currency, authenticity, validity, reliability, and be holistic in nature. The following *Table – Guide to Assessment Methods and Instruments* provides a summary of assessment methods in common use and the situations in which they may apply.

Table – Guide to Assessment Methods and Instruments

Assessment method	Appropriate instruments	Valid purposes or use	Conditions and numbers
Written objective tests	True/false Multiple choice Matching Completion	Confirming essential factual knowledge, principles Assessing deduction, transfer of knowledge Complementing other methods	Controlled classroom High level supervision Large numbers
Written responses, short and extended answers	Calculations Definitions, explanations Essays	Assessing use of information Application of knowledge General ideas and solutions Research, organization and expression of concepts or ideas	Test condition as above or Minimal supervision, and assistance
Oral test/ technical interview	Set question Scenarios	Assessing depth and breadth of knowledge Application of knowledge Relative to experience	Interview condition One to one
On job or workplace assessment	Observation, checklist Product assessment Questioning to complement observations	Identifying mastery or competence of practical task, technical skill or interpersonal skill in real or simulated setting Identifying gaps in education and training	Normal working condition Moderate level supervision One to one Avoid expensive or hazardous situations
Practical/ Exercises	Stimulated work exercises Structured practical exercises Fault finding exercises	Checking mastery or competence of a practical task, technical skill, or subset of performance in a simulated work setting	Controlled laboratory or field setting High level supervision
Practical projects	Research task or investigation Product or process development Individual learning contract	Assessing integration and application of a number of work related skills to solve a given problem Assessing individual approaches, innovation, creativity	Access to laboratory, workshop or workplace Little supervision

Assessment method	Appropriate instruments	Valid purposes or use	Conditions and numbers
		Assessing interaction with others	
Assignments	Resource life Case studied Poster presentation Reports of video or speaker presentations Reports of laboratory/field work, excursions Individual learning contracts Writing simple manuals or procedures	Confirming competence to research, analyse and synthesise information Assessment of application of knowledge, skills and attitudes where practical testing is not feasible Assessment of communication skills	Moderate of level control Non-test conditions Little supervision
Personal appraisal	Checklists or criteria which enable peer or self assessment	Establishing readiness for summative assessments Assessment of an individual's performance within a team effort	Non-test conditions Little supervision Small numbers
Verbal assessment	Oral exposition or lecture Seminar, presentation and group discussion Oral/aural tests Interviews	Confirming understanding of principles underpinning performance Supplement to other assessment methods Verification of learner's submitted work.	Moderate level of control High level of supervision One to one
Profiling¹	Structured manual or computer-based log.	Tracks competency development against the industry standard profile specified by CSUs. Identifies when remedial action is required during development period.	² Real work conditions under workplace supervision. Off-job assessment events Any number

¹ A valid profile is based on periodic collection of relevant data over the duration of a competency development training program.

² A complete profile is constructed from all required evidence of competency, however where a profile of only workplace performance is used it must be supplemented with other methods such as those outlined in this table.

1.3.09 Conducting Assessment

3.9 Conducting Assessment

This section details the mandatory assessment requirements and provided information on equity in assessment, including reasonable adjustment.

Mandatory Assessment Requirements

Assessments must meet the criteria set out in the AQTF 2010 Essential Standards for Initial and Continuing Registration.

For information, the mandatory assessment requirements from Standard 1 from the AQTF 2010 *Essential Standards for Initial and Continuing Registration* are as follows:

- "1.
5
- Assessment, including Recognition of Prior Learning(RPL):*
- a) *meets the requirements of the relevant Training Package or accredited course,*
 - b) *is conducted in accordance with the principles of assessment and the rules of evidence, and*
 - c) *meets workplace and, where relevant, regulatory requirements.*

Assessments must meet, at a minimum, the criteria set out in Standard 8 from the *Standards for Registered Training Organisations* which is reproduced below.

8 RTO Assessments

The RTOs assessments meet the requirements of the endorsed components of Training Package and the outcomes specified in accredited courses within the scope of its registration.

8.1 The RTO must ensure that assessments, regardless of whether through a training and assessment pathway or an assessment-only pathway:

- i comply with the Assessment Guidelines included in the applicable nationally endorsed Training Package or the assessment requirements specified in accredited courses;
- ii lead to the issuing of a Statement of Attainment or qualification under the AQF when a person is assessed as competent against nationally endorsed Competency Standard Units in the applicable Training Package or any additional information related to knowledge and skills specifications (e.g. modules) prescribed in the applicable accredited course;

- iii comply with the principles of validity, reliability, fairness and flexibility;
- iv provide for applicants to be informed of the context and purpose of the assessment and the assessment process;
- v where relevant, focus on the application of knowledge and skill to the standard of performance required in the workplace and cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills, and include transferable knowledge and skills to new situations and environments;
- vi involve the evaluation of sufficient evidence to enable judgements to be made about whether competency has been attained;
- vii identify issues related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment.
- viii provide for feedback to the applicant about the outcomes of the assessment process and guidance on future options;
- ix are equitable for all persons, taking account of cultural and linguistic needs; and
- x provide for reassessment on appeal.

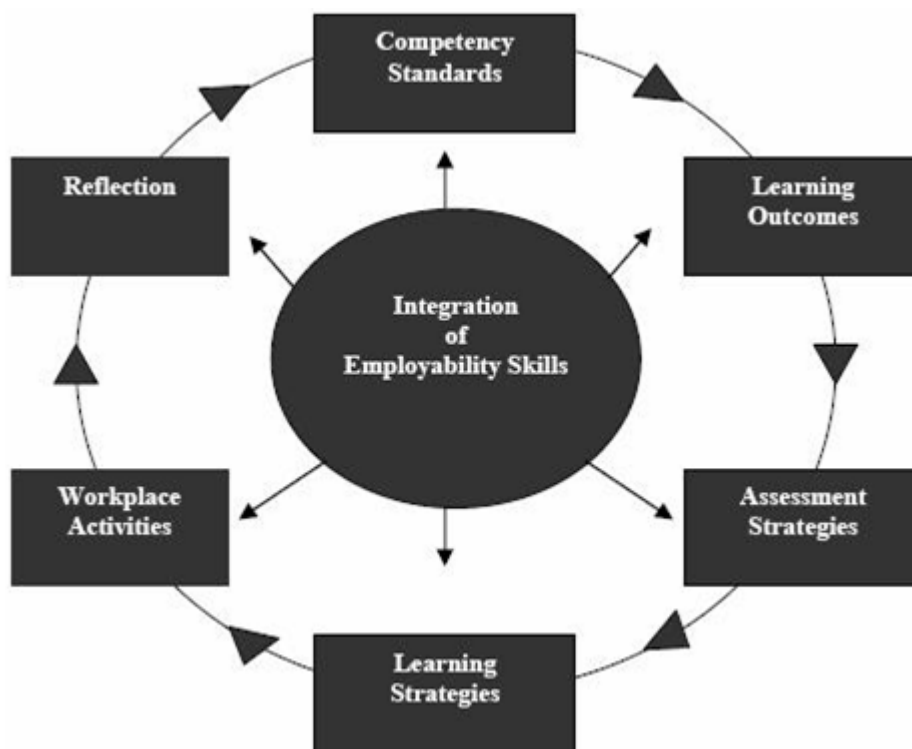
8.2 a The RTO must ensure that RPL is offered to all applicants on enrolment.

b The RTO must have a RPL process that:

- i is structured to minimise the time and cost to applicants; and
- ii provides adequate information and support to enable applicants to gather reliable evidence to support their claim for recognition of competencies currently held, regardless of how, when or where the learning occurred.

Assessment of Employability Skills

Employability Skills are integral to workplace competency. As such they must be considered in the design, customisation, delivery and assessment of vocational education and training programs in an integrated and holistic way, as represented diagrammatically below.



Employability Skills are embedded and explicit within each unit of competency. Training providers must use Employability Skills information in order to design valid and reliable training and assessment strategies. This analysis could include:

- reviewing units of competency to locate relevant Employability Skills and determine how they are applied within the unit
- analysing the Employability Skills Summary for the qualification in which the unit or units are packaged to help clarify relevant industry and workplace contexts and the application of Employability Skills at that qualification outcome
- designing training and assessment to address Employability Skills requirements.

For more information on Employability Skills in the ElectroComms and Energy Utilities Training Packages go to the EE-Oz website at www.ee-oz.com.au

Access and Equity

An individual's access to the assessment process should not be adversely affected by restrictions placed on the location or context of assessment beyond the requirements specified in this Training Package: training and assessment must be bias-free.

Under the rules for their development, Training Packages must reflect and cater for the increasing diversity of Australia's VET clients and Australia's current and future workforce. The flexibilities offered by Training Packages should enhance opportunities and potential outcomes for all people so that we can all benefit from a wider national skills base and a shared contribution to Australia's economic development and social and cultural life.

Reasonable Adjustments

It is important that education providers take meaningful, transparent and reasonable steps to consult, consider and implement reasonable adjustments for students with disability.

Under the *Disability Standards for Education 2005*, education providers must make reasonable adjustments for people with disability to the maximum extent that those adjustments do not cause that provider unjustifiable hardship. While ‘reasonable adjustment’ and ‘unjustifiable hardship’ are different concepts and involve different considerations, they both seek to strike a balance between the interests of education providers and the interests of students with and without disability.

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.

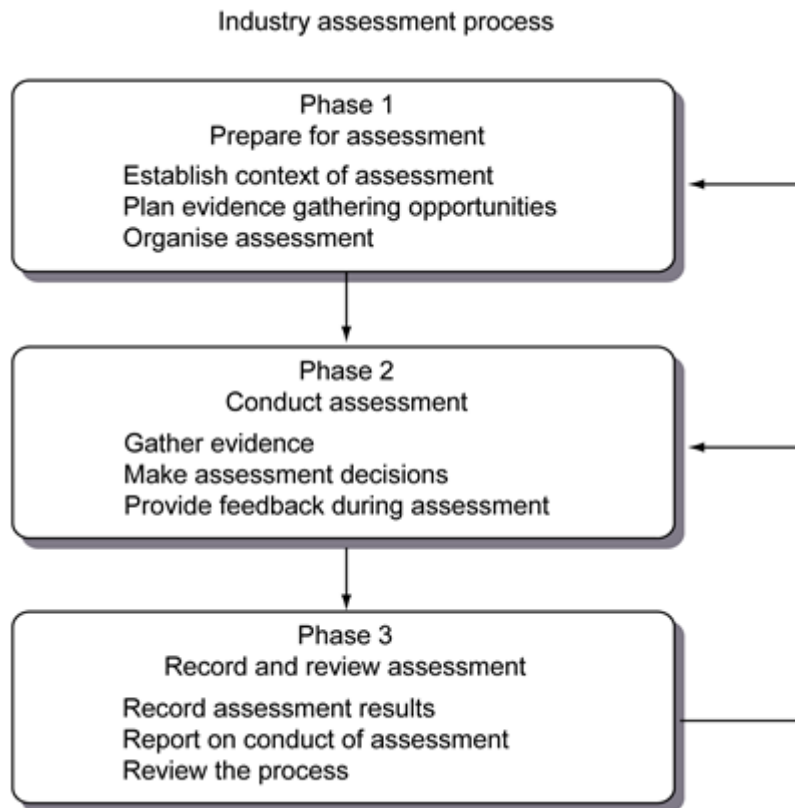
An education provider is also entitled to maintain the academic integrity of a course or program and to consider the requirements or components that are inherent or essential to its nature when assessing whether an adjustment is reasonable. There may be more than one adjustment that is reasonable in a given set of circumstances; education providers are required to make adjustments that are reasonable and that do not cause them unjustifiable hardship. The Training Package Guidelines provides more information on reasonable adjustment, including examples of adjustments. Go to <http://www.deewr.gov.au/tpdh/Pages/home.aspx>

Industry-preferred assessment process

The following describes the industry-preferred process for conducting assessments against the competency standard unit(s) in this Training Package. This process applies to all assessments conducted for the purposes of national recognition.

- Assessment within the Electrotechnology Industry must be carried out by a qualified assessor trained in the conduct of assessment.
- Assessment should be planned, arranged and organised well in advance of the event/process.
- The candidate should be involved in the planning and preparation so that their readiness and availability is assured and their advice on evidence collection opportunities may be considered.
- The environment within which assessment is to occur is acceptable to the parties and conducive to the assessment process.
- The assessor’s actions throughout the process are firm, fair, friendly and unambiguous.
- Specific rulings on safety breaches are explained up-front and acted upon in accordance with the assessment materials.
- The assessment process should contain no surprises for any party.
- Feedback is provided as required throughout the assessment process.
- Post assessment activities including recording, reporting, counselling etc. are finalised promptly.
- Candidates are more likely to accept the outcomes of an assessment process in which:
 - they consider they were treated fairly, consistently and with dignity
 - they were given the full opportunity to demonstrate their capabilities
 - the reasons for the assessment decisions were appropriate, logical and constructively explained
 - the assessment judgements are conveyed in a sensitive and constructive manner.

Below is an overview for assessment within the Electrotechnology Industry. It outlines the process involved in conducting assessment in both the institutional and workplace context, and consists of three major components that each assessor will need to do.



Phase 1 Prepare for assessment

The assessor:

- establishes the context and purpose of the assessment
- identifies the relevant competency standard unit(s) and assessment guidelines from this Training Package including the relevant performance measures applying to assessment
- identifies any NTQC-noted support materials that have been developed to facilitate the assessment process
- analyses the competency standards and identifies the evidence requirements
- identifies potential evidence collection methods
- identifies issues related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment.

Prepare the candidate

The assessor meets with the candidate to:

- discuss and confirm the purpose of assessment with the candidate and where appropriate, the employer
- explain the context and purpose of the assessment and the assessment process

- explain the competency standards to be assessed and the evidence to be collected and ensure the candidate has access to the relevant competency standards and any other relevant information
- explain and obtain agreement to the assessment procedure
- advise on self-assessment, including processes and criteria
- outline the assessment procedure, the preparation the candidate should undertake, and answer any questions.
- assess the needs of the candidate and where applicable negotiate reasonable adjustment when assessing people with disabilities; reasonable adjustment must not compromise the integrity of the competencies
- seek feedback regarding the candidate's understanding of the competency standard unit(s), evidence requirements and assessment process
- determine if the candidate is ready for assessment and, in consultation with the candidate, decide on the time and place of the assessment
- develop an assessment plan
- discuss the Electrotechnology Industry and enterprise assessment policy with the candidate, how the competencies to be assessed fit in with the industry training policy and the preferred framework or enterprise arrangements for training and assessment. The assessor should also discuss what the candidate has done to acquire the knowledge and skills.

Plan and prepare evidence-gathering process

Practical assessment is preferably conducted on-site. However, if on-site practical assessment is not possible then off-site assessment at a mutually agreeable site could be appropriate. It can be a part of the current work or a simulated task.

The assessor must:

- establish a plan for gathering sufficient quality evidence about the candidate's performance in order to make the assessment decision (and involve industry representatives in the development of plans for the validation of assessment)
- identify opportunities to gather evidence of competence which occurs as part of the workplace activities
- ensure the planned approach to gathering evidence will provide sufficient, reliable, valid and fair evidence of competence
-
- source or develop assessment materials to assist in the evidence gathering process
- choose the techniques that will be used to assess the candidate's knowledge and skill
- organise equipment or resources required to support the evidence gathering process
- check that the assessment environment allows for fair, valid and reliable assessment and that it is safe and accessible
- inform other relevant people of assessment plans
- coordinate and brief other personnel involved in the evidence gathering process
- identify the need to gather additional evidence which may not occur as part of workplace activities
- consider issues related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment.

Phase 2 Conduct the assessment

Collect the evidence and make assessment decisions

The assessor must:

- establish and oversee the evidence gathering process to ensure its validity, reliability, fairness, flexibility and consistency.
- collect appropriate evidence and assess this against the Elements, Performance Criteria, Range Statement and Evidence Guide in the relevant competency standard unit(s)
- evaluate evidence in terms of the four dimensions of competency – task skills, task management skills, contingency management skills and job/role environment skills
- incorporate allowable adjustments to the assessment procedure without compromising the integrity of the competencies
- evaluate the evidence in terms of validity, consistency, currency, equity, authenticity and sufficiency
- gather evidence related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment
- consult and work with other staff, assessment panel members or technical experts involved in the assessment process
- document the evidence gathered in accordance with the assessment procedure and record details of evidence collected
- make a judgement about the candidate's competency based on the evidence and the relevant competency standard unit(s) and the criteria specified in the assessment procedure.

Provide feedback on the assessment

The assessor must provide advice to the candidate about the outcomes of the assessment process.

This includes providing the candidate with:

- clear and constructive feedback on the assessment decision
- information on ways of overcoming any identified gaps in competency revealed by the assessment
- the opportunity to discuss the assessment process and outcome
- information on reassessment and the appeals process.

Phase 3 Record and review assessment

Record and report results

The assessor must:

- record the assessment outcome according to the policies and procedures of the RTO
- maintain records of the assessment procedure, evidence collected and the outcome according to the policies and procedures of the RTO
- maintain the confidentiality of the assessment outcome
- organise the issuing of qualifications and/or Statements of Attainment according to the policies and procedures of the RTO.

Review assessment process

- On completion of the assessment process, the assessor must:
 - review the assessment process
 - report on the positive and negative features of the assessment to those responsible for the assessment procedures
 - if necessary, suggest to appropriate personnel in the RTO ways of improving the assessment procedures.

Participate in the reassessment and appeals process

The assessor must:

- provide feedback and counsel the candidate, if required, regarding the assessment outcome or process, including guidance on further options
- provide the candidate with information on the reassessment and the appeals process
- report any disputed assessment decision to the appropriate personnel in the RTO
- participate in the reassessment or appeal according to the policies and procedures of the RTO.

Review and maintenance of the assessment system

EE-Oz Training Standards as the developer and custodian of this Training Package is responsible for the ongoing monitoring and review of these Assessment Guidelines. This process will be incorporated in the general review and maintenance of this Training Package.

1.3.10 Guidelines for Designing Assessment Materials

3.10 Guidelines for Designing Assessment Materials

Assessment materials are developed, designed and implemented by appropriately authorised and competent assessors. The materials may range from relatively straight forward questions/answers and task tests to quite elaborate simulations for assessing concepts and values. Assessment materials should facilitate the process of assessment by:

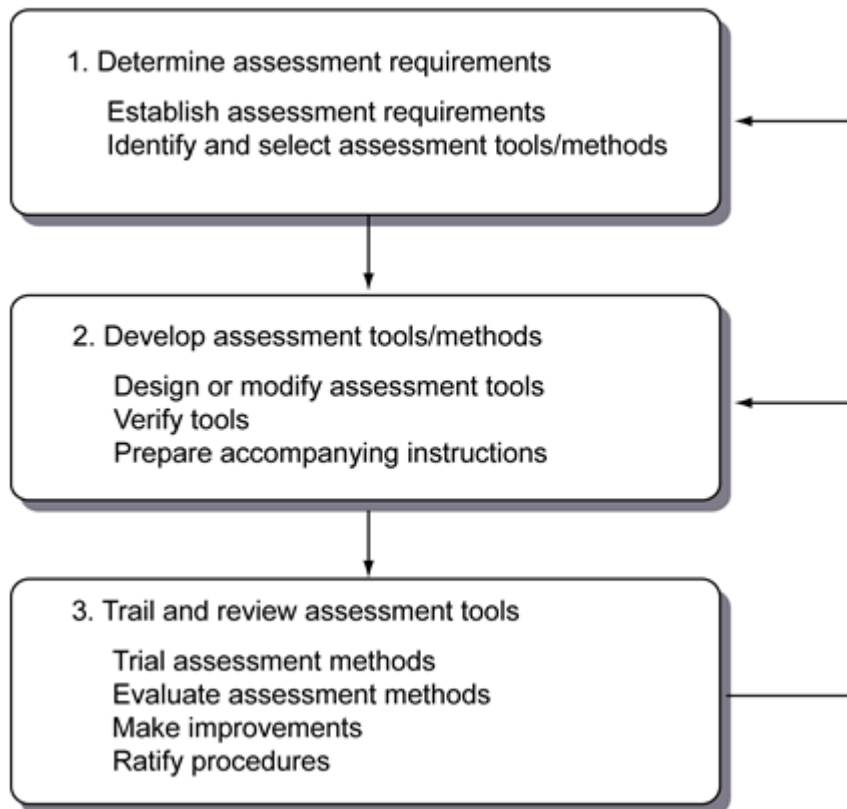
- detailing the personnel and material preparations required to support the **assessment** process
- establishing and/or confirming the circumstances under which the assessment is to take place
- detailing the evidence to be collected and the method(s) to be used to do this
- providing for the systematic review/analysis of the evidence on which logical and supportable judgments are made
- providing the means for recording the process and the judgments as required and in accordance with any regulatory and/or industry preferred arrangement
- providing a basis for post-assessment
- providing **counselling** and guidance for the candidate
- identifying specialist technical advice related to such things as OHS, LLN, **environmental** and equity matters.

Assessment Material Design Process

The three Phases in the process of designing assessment materials are:

- **Determine assessment requirements. This includes identifying appropriate assessment tools and methods**
- **Develop assessment tools and methods. This involves designing and/or modifying tools, and preparing instructions**
- **Trial and review assessment tools. This includes ratifying procedures and making improvements.**

Process for designing assessment materials



1 Determine assessment requirements

1.1 Identify assessment requirements. In the development of tools and methods of assessment, the assessor will need to determine the range of methods appropriate to the assessment context and the characteristics of the person being assessed. The assessor may use the following questions when designing the assessment method:

- Is the data **gathering** process sufficient, timely, valid and reliable to ensure the decision about competence relates to the overall requirements of the unit?
- Do you always need to assess real work?
- How is the **critical** evidence specified?
- How many **assessment** tasks are required to collect the critical evidence of competency?
- Which **assessment** tasks will provide a broad coverage of the Range Statement?
- Are there any skills that the candidate should have or can develop before they are assessed for the unit?

1.2 Identify and select assessment tools/methods. The assessor must identify and select the assessment methods consistent with Electrotechnology Industry assessment guidelines and procedures.

2 Develop assessment tools/methods

2.1 Design or modify assessment tools. The assessor must design or modify existing assessment tools so that their format, language, literacy and numeracy requirements are appropriate to the characteristics of the assessment context and the person being assessed.

2.2 Verify tools. The assessor must verify the assessment tools, which maintain validity but are easy to administer, and allow sufficient flexibility to meet the range of possible assessment contexts.

2.3 Prepare accompanying instructions. The assessment system/process must be comprehensively and clearly documented so that the stages of assessment and their constituent parts may be observed and evaluated. The assessment materials must relate directly to the competency standard unit or group of units making up a qualification and address the totality of competency in a realistic, holistic and effective way.

3 Trial and review assessment tools

3.1 Trial and validate assessment tools. The assessor must trial and validates the assessment methods with a representative group of people similar to those who will ultimately be assessed. Once trials are conducted the assessor must seek responses from all parties and compile and analyse these responses.

3.2 Evaluate assessment methods. The assessor must evaluate the assessment methods and tools for clarity, reliability, validity, fairness and cost-effectiveness.

3.4 Make improvements. The assessor must modify the assessment tools based on the responses to the trials.

3.5 Ratify procedures. The assessor must ratify, with relevant people in the industry, procedures related to evidence requirements, assessment methods and assessment tools, and the processes used in developing them.

Assessment Material Requirements

Essential requirements to be met by assessment materials include the following:

Assessment of competency standard units. Assessment must directly address the competency standard unit or group of units making up a qualification or Skill Sets and, within this, satisfy the *critical aspects of evidence*, including the related Performance Criteria, Range Statement and essential knowledge and associated skills.

Assessment of practical applications. Summative assessment of practical applications should, whenever possible and practicable, be conducted in a real work environment or in a realistically simulated work environment. Removal of the summative assessment from the real work environment should occur only to the extent necessitated by circumstances such as safety, noise, excessive cost and disruption to equipment operation, and access to the required work.

Learning outcomes or other curricula documents. Outcomes are not to be the primary focus of summative assessment unless their direct relationship to the competency standard unit(s) is formally approved by industry and recorded.

Assessment of essential theory. Summative assessment of the theory (essential knowledge and associated skills) underpinning competent performance is to be sufficiently rigorous and searching to ensure that individuals comprehend why they are doing something, the options they may use to achieve the required goal, and the fact that they can recall and/or locate and, interpret and transfer this information in varying contexts if it is needed at some other time. Typically, the specific level of depth and breadth the individual is required to achieve is contained in industry and RTO sponsored essential knowledge and associated skills knowledge and skills specifications that are aligned to respective competency standard units.

Assessment of under-represented groups or learners with low language, literacy or numeracy skills. Assessment systems must be able to be used for under-represented groups or in cases where learners have low language, literacy and/or numeracy skills. Reasonable adjustment strategies for these groups should be included in any assessment materials used by RTOs (which should be consistent with the quality assurance requirements of State Training Authorities for registration).

Assessment instruments to support training and assessment material design

See Appendix B *Sample assessment instruments to support training and assessment material design* for information on assessment material design, training and assessment activities and sample assessment materials.

1.3.11 Maintenance of Assessment Guidelines

3.11 Maintenance of Assessment Guidelines

The Electrotechnology Industry Assessment Guidelines were developed and are owned by the industry. The guidelines must be maintained so that they reflect the ongoing needs of the industry sector and respond in a timely manner to changed technologies, work organisation, skills development and related circumstances.

Responsibility for maintaining the Assessment Guidelines is shared by the parties who constitute the sector:

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

1.3.12 Further Sources of Information

3.12 Further Sources of Information

The section provides a listing of useful contacts and resources to assist assessors in planning, designing, conducting and reviewing of assessments against this Training Package.

Contacts

The ElectroComms and Energy Utilities Industry Skills Council

EE-OZ Training Standards
48 Mort St
Braddon ACT, 2602
PO Box 1202
Dickson, ACT, 2602
Ph: 02 6254 5180
Fax: 02 6257 4222
Email: ee-oz@ee-oz.com.au
Web: www.ee-oz.com.au

Technical and Vocational Education and Training (TVET) Australia Limited
Level 21, 390 St Kilda Road, Melbourne VIC 3150
PO Box 12211, A'Beckett Street Post Office
MELBOURNE VICTORIA 8006
Ph: +61 3 9832 8100
Fax: +61 3 9832 8198
Email: sales@tvetaustralia.com.au
Web: www.tvetaustralia.com.au

*For information on the TAE10 Training and Education Training Package contact:
Innovation & Business Skills Australia
Telephone: (03) 9815 7000
Facsimile: (03) 9815 7001
Email: virtual@ibsa.org.au
Web: www.ibsa.org.au*

1.3.13 General Resources

3.13 General Resources

AQF Implementation Handbook, Fourth Edition 2007. Australian Qualifications Framework Advisory Board, 2002 <www.aqf.edu.au>

*Australian Quality Training Framework (AQTF) and AQTF 2010 Users' Guide to the Essential Standards for Registration –
<http://www.training.com.au/pages/menuitem5cbe14d51b49dd34b225261017a62dbc.aspx>*

For general information and resources go to <http://www.training.com.au/>

The National Register is an electronic database providing comprehensive information about RTOs, Training Packages and accredited courses - <www.ntis.gov.au>
The Training Package Development Handbook site provides National Quality Council policy for the development of Training Packages. The site also provides guidance material for the application of that policy, and other useful information and links.
<http://www.deewr.gov.au/Skills/Overview/Policy/TPDH/Pages/main.aspx>

Assessment Resources

Registered training organisations (RTOs) are at the forefront of vocational education and training (VET) in Australia. They translate the needs of industry into relevant, quality, client-focussed training and assessment.

RTOs should strive for innovation in VET teaching and learning practices and develop highly flexible approaches to assessment which take cognisance of specific needs of learners, in order to improve delivery and outcomes of training.

Resources can be purchased or accessed from:

- TVET Australia – provides an integrated service to enable users of the national training system to identify and acquire training materials, identify copyright requirements and enter licenses for use of that material consistent with the scope and direction of the NQC.

<http://www.productservices.tvetaustralia.com.au/>

Assessment Tool Design and Conducting Assessment

VETASSESS and Western Australian Department of Training and Employment, 2000,

Designing Tests – Guidelines for designing knowledge based tests for Training Packages.

Vocational Education and Assessment Centre 1997, Designing Workplace Assessment Tools, A self-directed learning program, NSW TAFE.

Manufacturing Learning Australia, 2000, Assessment Solutions, Australian Training Products, Melbourne.

Rumsey, David 1994, *Assessment practical guide*, Australian Government Publishing Service, Canberra.

Assessor Training

Australian Committee on Training Curriculum (ACTRAC), 1994, Assessor training program - learning materials, Australian Training products, Melbourne.

Australian National Training Authority, A Guide for Professional Development, ANTA,

Brisbane or its replacement – contact DEEWR for more information on www.deewr.gov.au

Australian National Training Authority, Facilitator Packs for Certificate IV in Training and Assessment or its replacement – contact DEEWR for more information on

www.deewr.gov.au

Australian National Training Authority, Facilitator's Pack for Train Small Groups and Assessment or its replacement – contact DEEWR for more information on

www.deewr.gov.au

Australian Training Products Ltd *Assessment and Workplace Training, Training Package - Toolbox*, ATPL Melbourne (available from TVET).

Green, M., Moritz, R., Moyle, K. and Vale, K., 1997, *Key competencies professional development Package*, Department for Education and Children's Services, South Australia.

Victorian TAFE Association, 2000, *The professional development CD: A learning tool*, VTA, Melbourne.

Conducting Assessments

Bloch, B. and Thomson, P., 1994, *Working Towards Best Practice in Assessment: A case study approach to some issues concerning competency-based assessment in the vocational education and training sector*, NCVER, Adelaide.

Docking, R., 1991, *An A-Z of Assessment Myths and Assessment in the Workplace, Competence assessment briefing series*, No. 4, Employment Department, Perth, Western Australia.

Hawke, Geoff, 1996, Integrating Assessment of Learning Outcomes, Assessment Centre for Vocational Education, Sydney.

Hawke, Geoff, 1995, *Work-based Learning: Advice From Literature*, Assessment Centre for Vocational Education, Sydney.

National Assessors and Workplace Trainers Body, *Putting it into practice* [Training Package implementation Guide].

Parsloe, E., 1992, *Coaching, Mentoring and Assessing: A practical guide to developing competence*, Kogan Page, London.

Rumsey, David, 1993, "Practical issues in Workplace Assessment" in National Assessment Research Forum: A forum for research into competency-based assessment. [VEETAC Competency Based Training Working party Assessment Steering Group], NSW TAFE Commission, Sydney.

Rumsey, David, 1994, *Assessment Practical Guide*, Australian Government Publishing Service, Canberra.

Evidence-Gathering Methods

Australian National Training Authority, 1998, *A new assessment tool*, ANTA, Melbourne or its replacement – contact DEEWR for more information on www.deewr.gov.au

Gonczi, A. (ed.), 1992, *Developing a competent workforce: adult learning strategies for vocational education and training*, TAFE National Centre for Research and Development, Adelaide.

Kearney, Paul, 1992, *Collaborative assessment techniques*, Artemis, Tasmania.

National Assessors and Workplace Trainers Body, *The evidence resource kit – containing language, literacy and numeracy video and CD ROM*

1.3.13 Further Sources of Information

3.13 Further Sources of Information

This section provides a listing of useful contacts and resources to assist assessors in planning, designing, conducting and reviewing assessments

Contact	Details
National Industry Skills Council (ISC) for the ElectroComms and EnergyUtilities Industry	EE-OZ Training Standards 48 Mort St Braddon ACT, 2602 PO Box 1202 Dickson, ACT, 2602 Ph: 02 6254 5180 Fax: 02 6257 4222 Email: ee-oz@ee-oz.com.au Web: www.ee-oz.com.au
Western Australia ITC	WA IEU ITC Inc P O Box 597 BALCATTWA WA 6021 Tel: 08 9240 2688

Contact	Details
	Fax: 08 9240 2930 E-mail: admin@ieu.com.au
New South Wales ITAB	NSW U&E ITAB PO Box 615 DARLINGHURST NSW 1300 Tel: 02 9326 6097 Email: uensw@pacific.net.au Website: www.uensw.com.au
Victoria	EPIC Industry Training 29 Drummond St CARLTON VIC 3053 Tel: 03 9654 1299 Fax: 03 9654 3299 Email: epicitb@epicitb.com

Contact	Details
South Australia	Electrical, Electrotechnology, Energy & Water Skills Board PO Box 2584 GPO REGENCY PARK SA 5942 Tel: (08) 8347-4008 Fax: (08) 8219-0015 Email: admin@eeewsb.com.au
Queensland	Energy Skills Queensland PO Box 160 COOPERS PLAINS QLD 4108 Tel: 07 3216 9604 Fax: 07 3345 8346 Email: qusitab@qusitab.com.au
Northern Territory	Major Industries Training Advisory Council GPO Box 1610 DARWIN NT 0801 Tel: 08 8981 0077 Fax: 08 8941 7470 Email: mitac@mitac.org.au

Access to Assessment Resources

Learning Resources

EE-OZ Training Standards

48 Mort St
Braddon ACT, 2602
PO Box 1202
Dickson, ACT, 2602
Ph: 02 6254 5180
Fax: 02 6257 4222
Email: ee-oz@ee-oz.com.au
Web: www.ee-oz.com.au

Australian Training Products Ltd
Level 25, 150 Lonsdale Street
MELBOURNE VIC 3000
PO Box 5347BB
MELBOURNE VIC 3001
Telephone: (03) 9655 0600
Fax: (03) 9639 4684
Website: <http://www.atpl.net.au>
Email: sales@atpl.net.au

1.3.14 Appendix A - Australian Apprenticeships

3.14 Appendix A – Australian Apprenticeships

Australian Apprenticeships are work-related competency programs designed for entry level contracted employment for new entrants to the industry. All qualifications in this Training Package could be open to use as Australian Apprenticeships and are governed by State/Territory Training Authority arrangements and their limitations.

Australian Apprenticeships offer both employers and employees:

- relevant training
- a range of support service arrangements.

Typically they involve paid work and structured training and are underpinned by a training contract, which is registered with the relevant State/Territory Training Authority. Completion of the competency development program leads to an AQF qualification.

In some instances, and subject to any relevant State/Territory Training Authority arrangements, existing non-apprenticed workers may be eligible for Australian Apprenticeship opportunities. Inquiries with the relevant State/Territory Training Authority should be made in this regard.

Like traditional apprenticeships, Australian Apprenticeships involve a commitment from:

- the employer to provide an environment for systematic training of the Australian Apprentice
- the Australian Apprentices to apply themselves to learning the requirements of their vocation
- a Registered Training Organisation (RTO)¹ to be responsible for providing the vocational education, training and assessment support services and the eventual issuing of a national qualification

In the Electrotechnology Industry, Australian Apprenticeships are available for all the qualifications outlined in this Training Package. Australian Apprentices seeking one of the national qualifications will be required to undergo a training program or course of study that involves learning and assessment activities. The related learning and assessment activities are documented and involve:

- the employer
- the employee
- the RTO.²

On successful completion of the training program or course of study, an RTO will issue the Australian Apprentice a national qualification.

¹ TAFE Institutions, universities with TAFE sectors, Skills Centres and similar enterprises that can deliver vocational training are eligible to become RTOs. For more information on RTOs see DEEWR's 2005 *Australian Quality Training Framework Standards for Registered Training Organisations*, effective from 1 July 2005 publication.

² TAFE Institutions, Universities with TAFE sectors, Skills Centres and similar enterprises that can deliver vocational training are eligible to become RTOs.

Entry Requirement

Under Australian Apprenticeships the employer is able to determine the relevant employment criteria for recruiting a new entrant into the Electrotechnology Industry. However, the choice is usually dependent on enterprise employment practices and needs, including requirements that may be imposed by relevant regulations and codes of practice.

Subject to any relevant State/Territory Training Authority arrangements, existing non-apprenticed workers are eligible for Australian Apprenticeship opportunities. Inquiries with the relevant State/Territory Training Authority should be made in this regard.

There is a common set of attributes/profiles that are preferred by the industry for the recruiting of Australian Apprentices.

- Any person aged 15 years or more can apply for an Australian Apprenticeship.
- Most employers require that applicants have completed at least Year 10 of a secondary school education program.

Potential entrants should be aware that employers are looking for the following personal attributes:

- effective numeracy and literacy skills
- effective communications skills
- acceptable presentation
- punctuality
- a positive attitude
- interest in the industry as a career
- ability to work at heights or in confined spaces and around moving machinery
- ability to distinguish between colours.

The terms and conditions for Australian Apprenticeship training require a training agreement or contract, called an Apprenticeship/Traineeship Training Contract, provided by State/Territory Training Authorities and setting out the responsibilities of the parties to the contract.

- Parties to the Apprenticeship/Traineeship Training Contract select the appropriate qualification, appropriate competency standard units and adopt an industry-preferred model or design a new training plan/program that must be agreed to by all parties. Competency standard units used to make up a qualification must be used in the workplace of the employer or be accessible through some job rotation arrangement with other workplaces.

The employment of an apprentice (sometimes also called a trainee) by an employer is subject to the relevant legislation and any applicable industrial instrument, order or determination made under that related Statutory Act. Appropriate information should be obtained from relevant authorities in this regard.

General principles governing the Competency Development Program

In consultation the RTO, the employer and the apprentice/trainee reach agreement on the Competency Development Program that will be delivered. Typically the RTO will adopt the industry-preferred approach where regulatory arrangements are in place or they will design an appropriate program in consultation with the industry. The apprentice/trainee would be expected to undertake the Competency Development Program in order to attain competence in the given qualification.

The Competency Development Program

The training contract, developed in consultation with the RTO(s) provides a description of the process for undertaking training during the life of the training program. The training plan will outline the required on and off-the-job arrangements that apply to it.

The Training Program

1. Expected duration of workplace program in hours

The training program will detail the anticipated time in hours that the apprentice/trainee is expected to work in order to gain the necessary competencies. Information regarding the suggested nominal duration for AQF levels of Australian Apprenticeships is available from respective parties to the contract of training including EE-Oz Training Standards.

2. On-the-job skills development program

In consultation with the apprentice/trainee and employer, the RTO provides advice on how evidence is to be gathered when the apprentice/trainee is in the workplace.

Apprentices/trainees are expected to assist RTOs in gathering and submitting workplace evidence in line with the industry-preferred approach. This is particularly important where regulatory arrangements are in place. RTOs in turn monitor the performance of the apprentice/trainee and provide appropriate feedback to them and the employer.

3. Off-the-job skills development program

The training contract will detail, where applicable, the off-the-job (technical education) program the RTO will deliver to provide the necessary underpinning skills and knowledge. For example where modules or essential knowledge and associated skills strategies apply, the number, title and duration of each will generally be advised. This will also include the expected duration of the technical educational program in hours. Typically this is a program preferred by the industry.

Typical duration of Australian Apprenticeships

A range of influencing factors, including NTQC policy, help to determine the typical period of employment and related training for individuals seeking a qualification, using the Australian Qualification Framework (AQF).

Detailed information on typical Australian Apprenticeship durations, at each of the AQF levels is available from EE-Oz Training Standards. This detail can be obtained directly from EE-Oz Training Standards or found on the EE-Oz Training Standards website at www.ee-oz.com.au. Additionally, more specific information may be contained within any related support materials that may exist as non-endorsed components of this Training Package and in particular the industry-preferred training plan applicable to each qualification.

As a general rule it is expected that new entry-level recruits require a 'nominal duration' of training to satisfy the outcomes of competency standard units. Nominal duration is usually defined by State/Territory and Federal Training Authority policies and/or regulations, set out in State/Territory Training Package Implementation Guides. For information refer to the relevant Training Package Implementation Guide which can be accessed via the State/Territory Training Authority websites.

1.3.15 Appendix B - Sample Assessment Instruments

3.15 Appendix B – Sample Assessment Instruments

These instruments are designed to Support Training and Assessment Material Design

This Appendix provides advisory and sample information for assessment material design to benchmark quality outcomes. It also contains information on resources available to support implementation of the Training Package and how these resources relate to the workplace and where they can be obtained.

The sample assessment tools/instruments in this Appendix were developed to assist:

- those involved in benchmarking activities designed to gather and record evidence about workplace tasks and experiences for training and assessment purposes
- in achieving consistency in the assessment of the underpinning knowledge and skills of the units.

The assessment strategies and instruments are primarily for use as advisory information for workplace assessors and/or their agents (workplace supervisors or technical experts) who may be employees of Registered Training Organisations or enterprises.

This Appendix should be read in conjunction with the following publications:

- The relevant volumes of this Training Package
- Training Package for Training and Assessment TAA04
- Training Acts and Regulations in the relevant Australian State/Territory
- Policies of the RTO involved with training and assessment for the industry.

See Appendix A Glossary of Terms for the meaning of specific terms used.

Competency Development Models

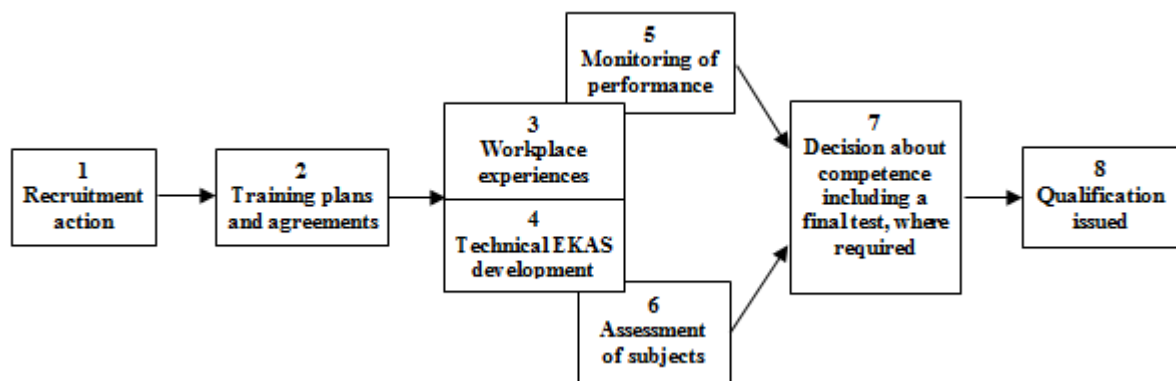
This section introduces competency development and/or recognition models based on combined on and off-the-job training and a model that allows individuals to have previous learning and work experience recognised.

Combined on and off-the-job competency development model

This model is structured around a new entry level learner undertaking a full competency development program. It recognises that learning occurs as a result of:

- experience in recurring workplace events
- directed workplace learning activities
- structured off-the-job essential knowledge and associate skills technical educational activities.

The model is a simplified version of the detailed contracted new entry level industry-preferred competency development model. A detailed copy of this model is available from EE-Oz Training Standards website at www.ee-oz.com.



Competency Development Model

This model can accommodate the assessment of prior learning within the continuum of new entrant to competent. In this way it is consistent with the Assessment Pathways outlined in this Assessment Guidelines part of the Training Package.

New entrant competency development model

In designing training and assessment materials and resources to support new entrant competency development, consideration should be given to the preferred industry approach to learner development, in particular

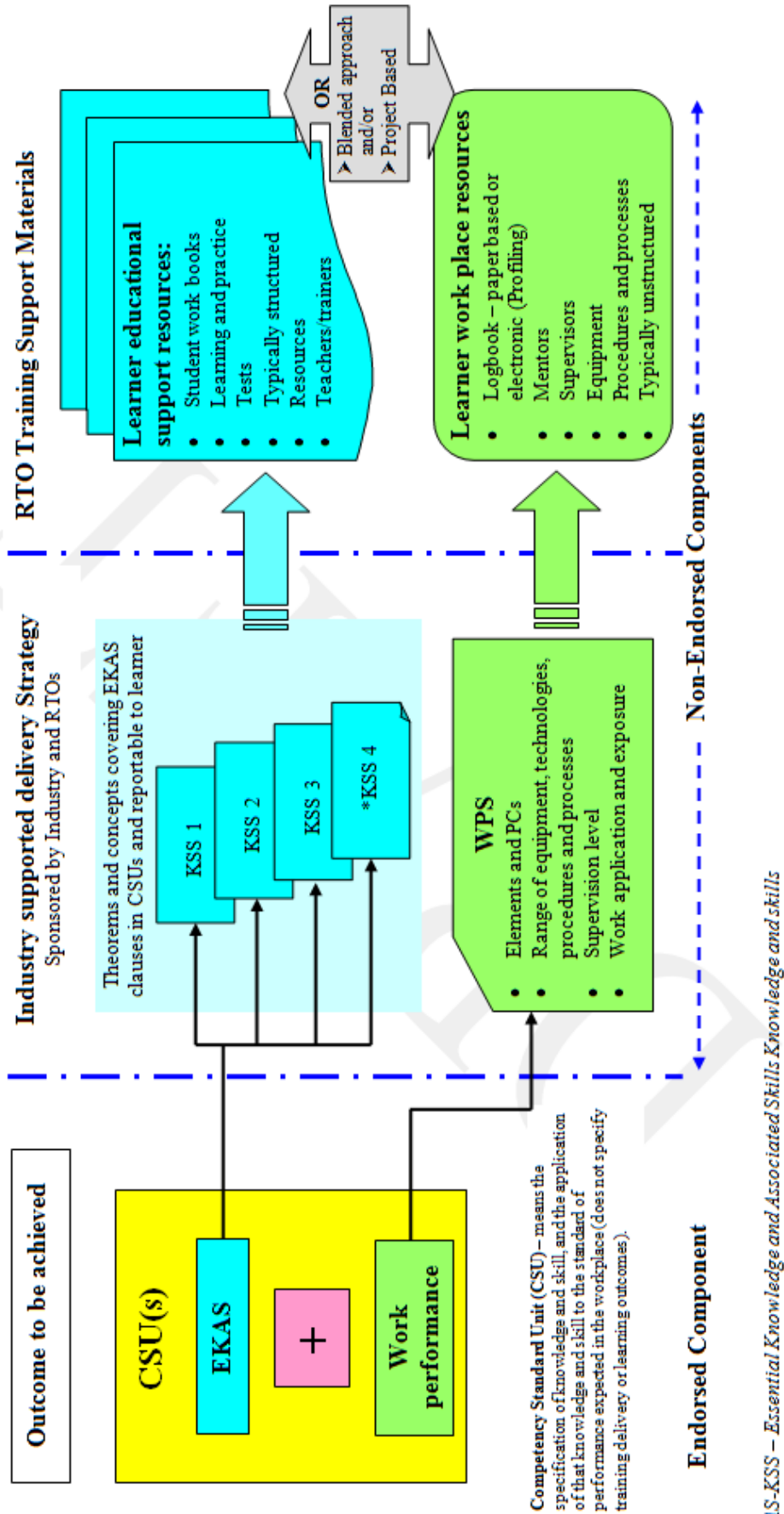
- recognising learning, eg the trainee has completed some aspects but not all the competency standard unit(s) required
- providing information that is transferable to other environments in the industry.

The concept model detailed on the next page explores how training and assessment materials and resources may be best developed for one or more competency standard units.

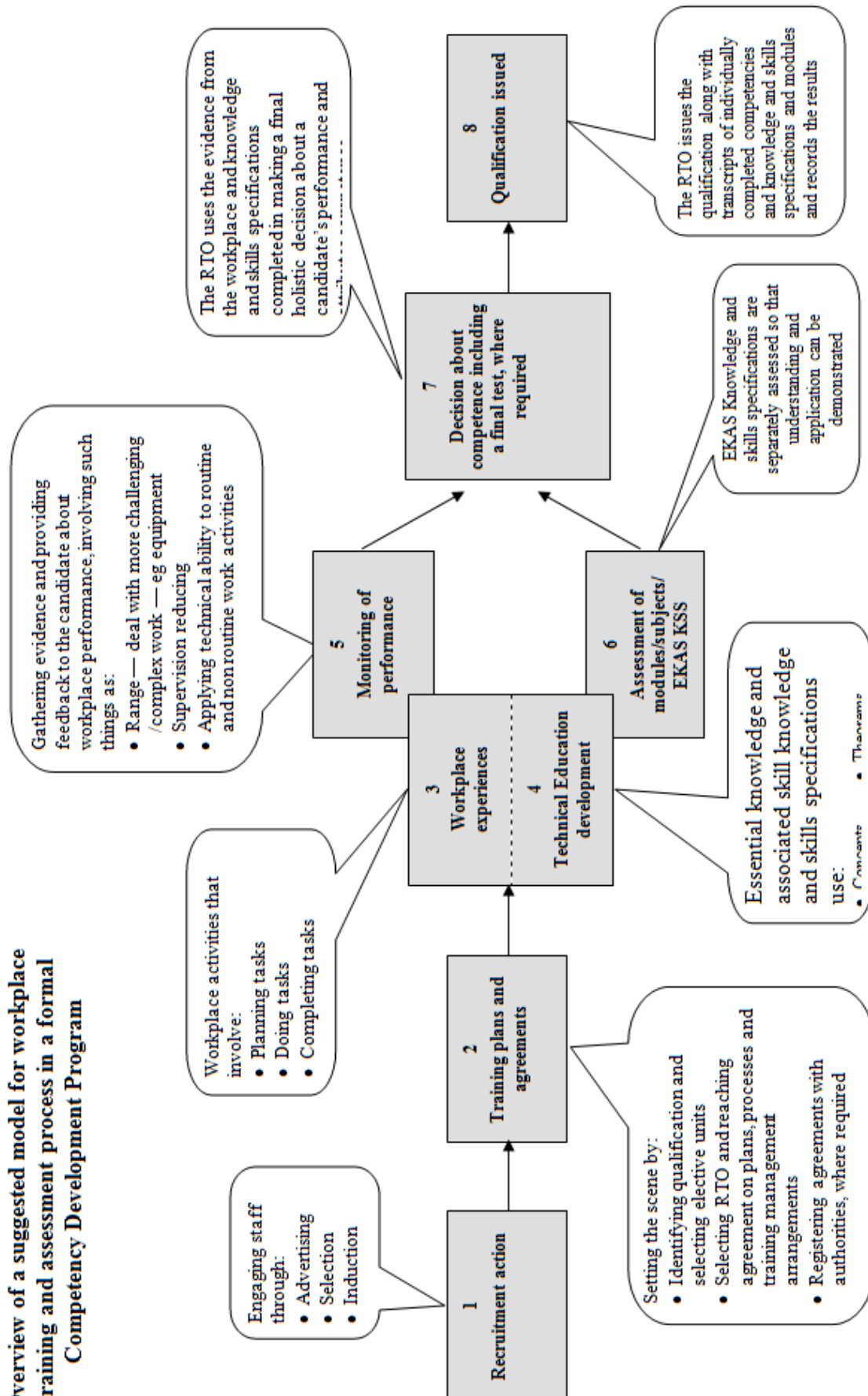
Using this approach an RTO can ensure increased consistency in

- meeting the specifications in learning and work performance against the competency standard units
- developing the learner in a cost effective way with little disruption to the day-to-day operation of the workplace.

RTO competency development training design model for new entrants using one CSU as an example

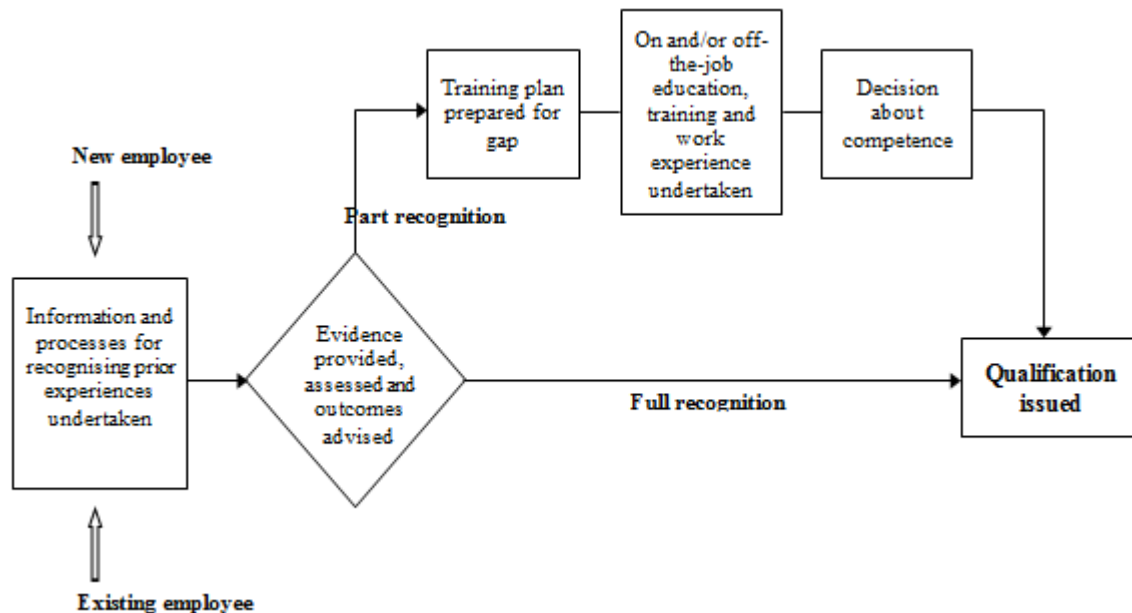


Overview of a suggested model for workplace training and assessment process in a formal Competency Development Program



Recognition of Prior Learning/Experience Model

A typical process for candidates seeking to have their prior experiences recognised within the model is shown in the following diagram.



Learning and Assessment strategies

The skills and knowledge required by a competent worker are described in terms of competency standard units. To be assessed as 'competent' against competency standards individuals need to demonstrate that they have the requisite workplace skills and the essential knowledge and associated skills (EKAS) underpinning performance as specified in the competency standard unit.

A candidate must be assessed by a qualified assessor. The assessor must use assessment processes, methods and tools which are in line with this Training Package.

Assessment involves gathering evidence to demonstrate essential knowledge together with requisite skills/work performance. This may include assessment of knowledge and skills obtained through educational courses as well as through application of knowledge and skills in the workplace using workplace processes, equipment and activities.

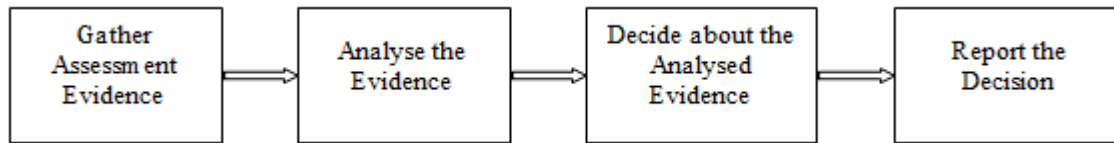
Assessment Planning

Good planning of workplace assessment is most important. The plan is to be based on a suitable process, one that is in line with the Competency Unit — TAAASS401A Plan and organise assessment. Assessors need to address the following components of competence in Training Package TAA04, which cover:

- establishing evidence requirements for a specific context
- establishing suitable assessment methods
- developing assessment tools appropriate to a specific assessment context
- trailing assessment procedure.

The Assessment Process

The general process for assessing competence is shown in the following diagram.



Assessors need to adapt the process to take account of physical and operational conditions as well as the characteristics and background of the candidate being assessed. Once the process has been finalised, the candidate should be advised.

Assessment Pathways

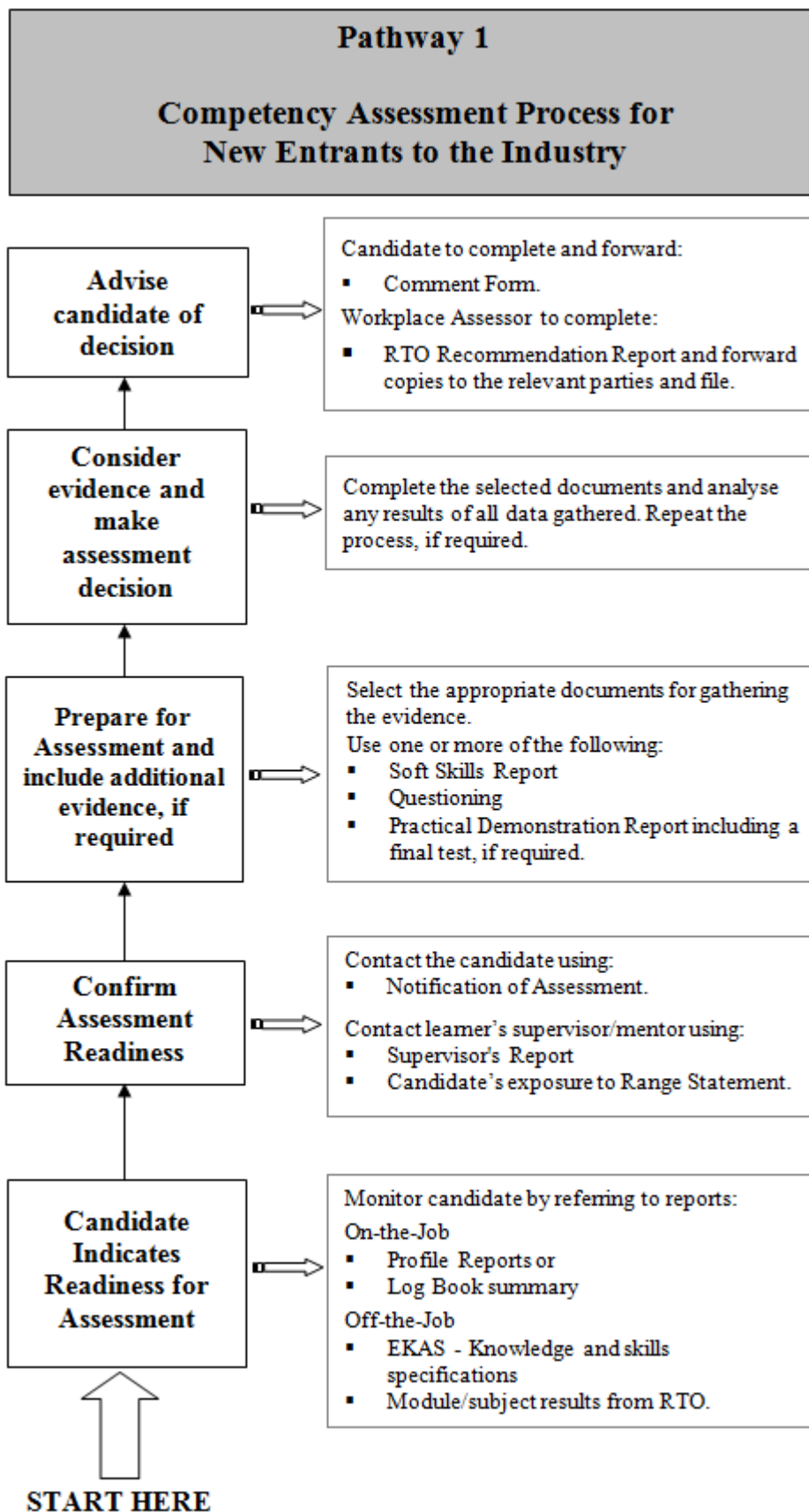
The Assessment Guidelines of this Training Package identify three assessment pathways for the Industry, as follows:

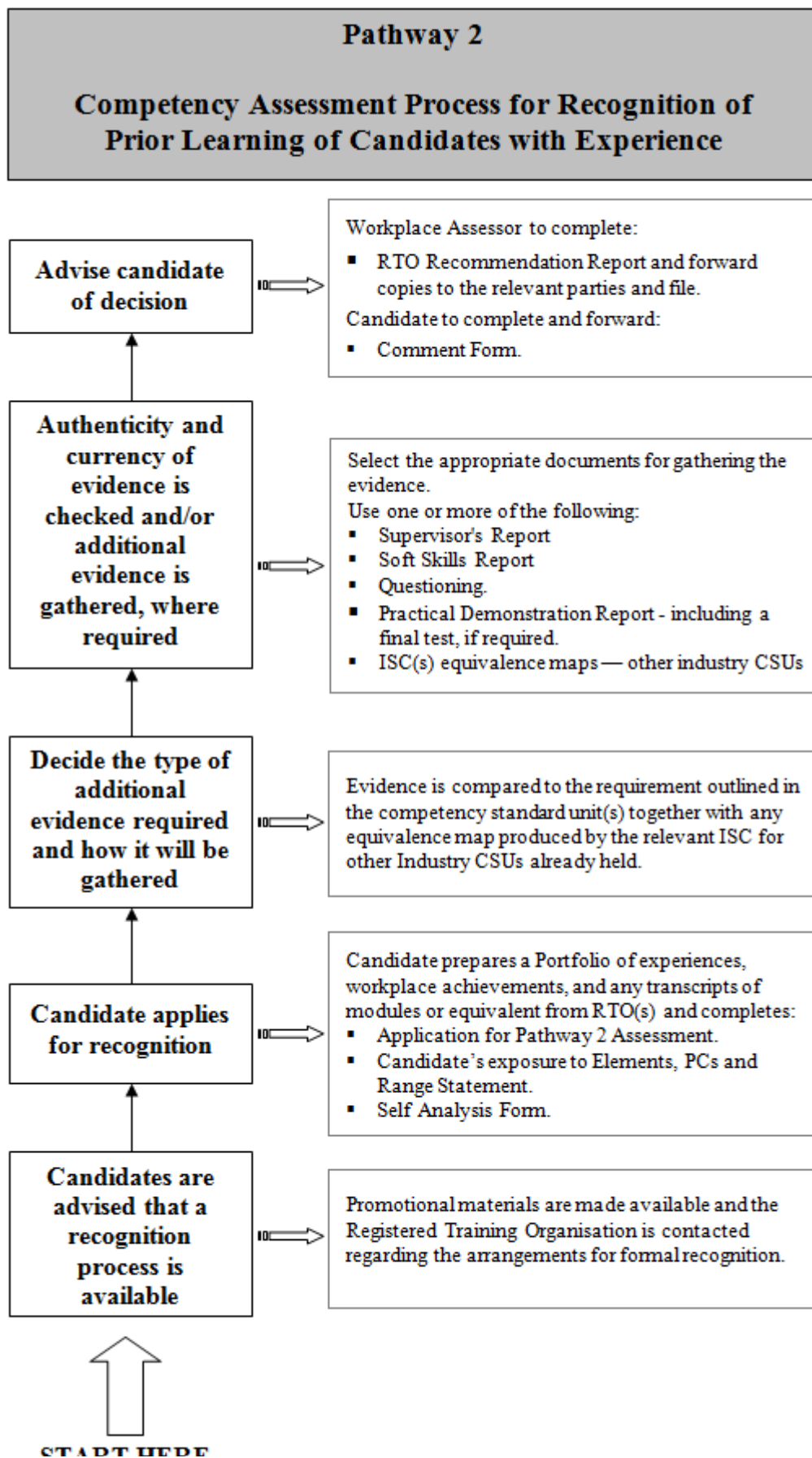
Pathway 1: For new entrants to the industry

Pathway 2: Recognition of prior learning of those with experience in the Industry

Pathway 3: Recognition of equivalent competency standard units from other Industry Training Packages

Note: Pathway 3 can be incorporated within the Pathway 2 processes and activities.





Establishing the Evidence Requirements

Training Packages provide a clear statement regarding the evidence requirements in the Evidence Guide and in particular the critical aspects of evidence of each competency standard unit. The following is an extract from one competency standard unit.

‘Critical aspects of evidence required to demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UEE07". Evidence shall also comprise:

A representative body of performance criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

- *Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range; and*
- *Apply sustainable energy principles and practices as specified in the performance criteria and range; and*
- *Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result; and*
- *Demonstrate an appropriate level of skills enabling employment; and*
- *Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures; and*

Demonstrated performance across a representative range of contexts from the prescribed items below:

- *Verify compliance and functionality of general electrical installations as described as described in 8) and including:*

A – Selecting correct tools and testing equipment

B – Identifying visual non-compliance defects

C – Using effective methods for conducting mandatory and optional tests

D – Identifying non-compliance from test results

E – Identifying causes of non-compliance

F – Completing mandatory reporting

G – Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items’

The evidence on which competency is deemed shall be considered holistically.

‘**Items**’ of evidence that the industry deems critical and that also relate directly to the Performance Criteria and Range Statements include such items as:

- Specific tools, plant and equipment
- Specific testing techniques
- Any advice limiting assessment to actual workplaces, for example because of licensing, regulatory or unique infrastructure requirements
- Specific licensing and regulatory requirements
- Any advice dealing with unexpected and non-routine contingencies by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment.

Assessment Methods

Assessment involves determining whether a candidate has provided sufficient evidence to demonstrate that they have a specified level of skills and knowledge which they can apply in their work environment.

- The evidence provided may include:
 - work activity records
 - a transcript of training outcomes
 - a portfolio of learning experiences
 - a self-assessment by the candidate against the relevant competency standard(s).
 - supervisor's report(s), addressing requirements of the identified competency standard(s)
 - practical demonstration
 - details of training undertaken linked to requirements of the identified competency standard(s), such as a profiling or 'many samples' reports
 - outcomes of a challenge test.

The assessor may use a variety of assessment methods to gather evidence. Appropriate methods for documenting workplace experiences related to this Training Package are:

- on-the-job work observation
- practical exercises in the workplace or under simulated workplace conditions
- appraisal and report by a supervisor/trainer or colleague
- questioning and discussion with the candidate
- written/practical test
- any Industry Skills Council equivalence mapping declaration for competency standard units held from other Industry Training Packages.

Develop the Assessment Tools

The assessment tools include:

- instruments for gathering evidence – samples included as Enclosure A
- forms for administering the process – samples included as Enclosure B
- assessment design materials Glossary of Terms – included as Enclosure C.

Trial the Assessment Procedure

It is very important to trial the assessment strategy. There is a need to make sure it is appropriate to the context in which the assessment is conducted. This will involve:

- a focus on the specific requirements of the competency standard unit being assessed
- consideration of the characteristics and background of the person being assessed to make sure the assessor supports the candidate in their understanding of the process and the skills and knowledge that need to be demonstrated

- use of assessment methods and instruments to make sure the evidence gathered:
 - addresses the conditions required to meet the Critical Aspects of Evidence as outlined in this Training Package and related competency standard units
 - is drawn from a variety of sources and reflects the required range of work circumstances
 - provides reasonable certainty that the evidence submitted is sufficient, current and authentic.

The selection and application of assessment tools is a decision made by assessors. There is no standard answer, however the following is provided as general guidance.

- Assessors need only gather enough evidence so they can make a judgment that competence has been demonstrated. Too much evidence may be difficult to analyse in a consistent manner, whereas insufficient evidence fails to satisfy the assessment criteria.
- Assessors need to adjust or modify the assessment processes and tools as required, within the constraints of achieving a valid, reliable and fair outcome.
- Assessors need to make sure assessment procedures satisfy the principles of assessment (validity; reliability; flexibility; fairness).
- Assessors need to be cognisant and use the industry-preferred assessment approach, as a first option.
-

Appendix B – Enclosure A: List of Sample Assessment Instruments

Enclosure A1	Work activity records
Enclosure A2	Transcript of training outcomes
Enclosure A3	Portfolio
Enclosure A4	Self analysis
Enclosure A5	Candidates exposure to Range Statement
Enclosure A6	Supervisor’s report
Enclosure A7	Supporting skills report
Enclosure A8	Questioning
Enclosure A9	Practical demonstration
Enclosure A10	Final/challenge test
Enclosure A11	Contracted entry level Profiling Model

Enclosure A1 – Work Activity Records

Work Activity Records summarise:

- relevant activities – jobs/tasks undertaken at work
- associated resources used such as tools, plant/equipment, procedures, and operating systems
- the period of exposure to each type of task
- the level of supervision provided in the workplace.

This type of record is completed by the candidate in conjunction with the supervisor and signed by supervisor. It is important that workplace experiences are documented by candidates to help them see how their work skills and knowledge are developing relevant competency standard units.

Work Activity Records may be produced in hard copy or in electronic form. A Work Activity Record may relate to a group of competency standards or a competency standard unit. Most often the activities and experiences recorded should be recurring workplace events/performance that involves exposure to a range of plant, tools, equipment, components and operating systems. Appropriate supervision of representative normal work activities is important to a candidate's development.

Work Activity Records provide valuable data for:

- candidates and their supervisors to track progress in acquiring work-based competencies
- assessors to make decisions about a candidate's level of competence.
- From these records assessors can determine if:
 - exposure to the desired workplace activities has occurred
 - the level of supervision is in keeping with the degree of autonomy required by the competency standard unit
 - the learner is able to perform 'whole of job' activities.

The ElectroComms and EnergyUtilities Industry Skills Council trading as EE-Oz Training Standards has a model hardcopy document that candidates can use to record their workplace activities and experiences. The document is called a User Guide. It is formatted in a way that links workplace activities to competency standard units.

More information, including User Guides and techniques for recording workplace experiences electronically, are available from the EE-Oz Training Standards at website: www.ee-oz.com.au.

Enclosure A2 – Transcript of Training Outcomes

Essential knowledge and skills, including that gained from off-the-job training, enables learners to:

- deal with both routine and non-routine technical activities
- readily adapt their skills when new technologies are introduced
- transfer skills to new work environments.

The RTO issuing the credential can generally provide current information about an individual's progress in the essential knowledge and associated skills or mapped modules/topics/subjects.

Learners who have undertaken a recognised structured training program with an RTO should submit a formal transcript – "Statement of Results" (training outcomes) from the issuing RTO as evidence, for inclusion in the process of competency assessment.

Candidates seeking recognition of prior learning need to provide evidence of knowledge and skills equivalent to the content of the essential knowledge and associated skills specifications detailed in the competency standard units in which they are being assessed, as well as their workplace experiences. Applicants for recognition of prior learning may also seek advice from the RTO about the equivalence status of available evidence of their acquired knowledge and skills.

The ElectroComms and EnergyUtilities Industry Skills Council trading as EE-Oz Training Standards at www.ee-oz.com.au can provide advice in regard to the availability of the essential knowledge and associated skills knowledge and skills specifications which have been aligned to respective competency standard units and essential knowledge and associated skills clauses.

Enclosure A3 – Portfolio

A portfolio is a collection of documents that demonstrate an individual’s professional experiences and achievements in relation to identified competency standards. Typically, portfolios include information from academic achievements, employment record, work activities, supervisor reports and references.

The candidate should prepare his/her own portfolio as an accurate reflection of work and academic history and achievements.

Assessors advise candidates about the amount, type and format of evidence they should submit for assessment against identified competency standard units.

The use of a Portfolio as an assessment instrument can be enhanced by the use of the Self-analysis form included as Enclosure A4.

Enclosure A4 – Self Analysis

Self-analysis involves candidates in assessing their own level of skills and knowledge acquired through work experience and relevant training programs.

Candidates should complete a Self-Analysis Form in relation to each competency standard being assessed; identifying the evidence they can provide to demonstrate each required component of their skills and knowledge.

Assessors can check the references to determine if the evidence provided links directly or indirectly to the requirements outlined in competency standard units and use this data as part of the overall assessment process.

Typically, the self-analysis form would be used for a Pathway 2 Assessment; however, it could have application in a Pathway 1 Assessment in certain circumstances.

Self-Analysis Application Form

This form allows candidates to summarise their vocational experiences in relation to a particular competency standard units or a group of units. The information provided is used to identify the list of competencies sought for assessment. Candidates need to support their responses to questions, claims and/or comments with authentic evidence. To do this, it is recommended that they develop a portfolio of evidence to be submitted with the Self-Analysis Application Form. The information provided in the Self-Analysis Application Form should be cross referenced with the information provided in the Portfolio.

Candidates must be provided with clear instructions about the information required before they complete each form. They also need to view and understand the detailed requirements of the competency standard unit(s) against which they are seeking assessment. A workplace assessor should assist them with the instructions and details.

Candidates may need to submit a separate Self-Analysis Form for each competency standard unit(s) for which they are seeking recognition.

A sample Self-Analysis Application Form is provided below.

Sample — Self-Analysis Application Form

Enter the codes and title of the National Qualification and title and codes the Competency Standard Unit(s) from qualification for which you are seeking recognition.

Title of National Qualification	Title and code of Competency Standard Unit(s) (For which recognition is being sought)
	•

	•
	•
	•
	•
	•
	•

Enter the codes and titles of Certificates, Qualifications, Transcripts of Academic achievement, or Licences that you believe to be supporting evidence. (Remember to include these documents in your portfolio. You must be able to demonstrate how each document relates to the respective competency standards.)

Code and name of Certificate, Qualification, Transcript of academic record or Licence	Year Achieved

Note: For all Certificates, Qualification and associated transcripts of academic records identified above, a certified copy must be provided.

Approximately how many jobs have you been involved in that relates to each of the respective Competency Standard Unit(s)?

- Competency Standard Unit 1 _____ Jobs
- Competency Standard Unit 2 _____ Jobs
- Competency Standard Unit 3 _____ Jobs
- Competency Standard Unit 4 _____ Jobs
- Competency Standard Unit 5 _____ Jobs
- Competency Standard Unit 6 _____ Jobs
- Competency Standard Unit 7 _____ Jobs

Give details about the **largest** job you have been involved with. Briefly describe the job and where it was carried out. (Portfolio Ref _____)

Estimate the total amount of time (for all similar job mentioned above of all size) you have been involved with - tick box. (Portfolio Ref _____)

	Less than 1 week	1 to 4 weeks	4 to 10 weeks	10 weeks to ½ year	More than ½ year
1					
2					
3					
4					
5					
6					
7					

Describe the level of involvement you have had in this type of work - tick box. (Portfolio Ref _____)

	Carrying out jobs organised by others	Carrying out jobs organised by others and completing all tests and/or writing of reports	Planning the job from the beginning, carrying out the work and completing all tests and writing of reports
1			

2			
3			
4			
5			
6			
7			

To what extent were you involved in this type of work? Tick box.
 (Portfolio Ref _____)

	Carrying out routine tasks	Carrying out and manage several routine tasks at one time	Deal with non routine tasks including diagnosing and rectifying faults	Organising others you work with and dealing with clients
1				
2				
3				
4				
5				
6				
7				

How much training did you require to perform the work? Tick box.
 (Portfolio Ref _____)

	Self taught skills	Basic technical knowledge and skills	Analytical technical knowledge and skills	People and customer skills
1				
2				

3				
4				
5				
6				
7				

To what degree were you supervised when performing the work? Tick box.

	Constant supervision	General supervision	Self supervision
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Describe any special features or circumstances about the type of work you have been involved with. (Portfolio Ref _____)

List as many different types of equipment items you used when you carried out the work associated with the Competency Standard Units. Make the list under headings such as plant, tools, components, systems and the like. A workplace assessor can assist you with the headings. A separate form may be provided for supplying this information. (Portfolio Ref _____)

Unit code	Unit title	Items	

For the Competency Standard Units, have you completed a whole job using the equipment items listed above? Also indicate the number of times you have done so.

CSU - 1	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU -	Involvement (circle yes or no)			Number of times

2				
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 3	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 4	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 5	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 6	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU - 7	Involvement (circle yes or no)			Number of times
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

Declaration by Candidate

All the information provided is entirely factual:

Name:

Signed *Date:*

Enclosure A5 – Candidate Exposure to Range Statement

Usually completed by the candidate, this assessment instrument augments other information needed for judging competence. It should provide a list of components from the Range Statement that the candidate has been exposed to in the workplace, e.g. tools, systems, plant, test equipment and associated items. Since the Range Statement is a component part of the whole unit, assessors should ensure that the gathering of evidence by the candidate is seen as a formative part of the assessment process. Once the evidence is presented, a holistic approach to judging and attributing competence is exercised in conjunction with other related data.

Competency standard unit – _____ <i>*(Assessor to complete this section)</i>		Candidate to Complete Identify the items you have worked on
*Range Statement Item Group	*Range Statement Items Involved	
A Personal protective equipment	Goggles	4
	Gas mask	4
	Boots	
	Gloves	4
B Wiring types	TPS	
	MIMS cable	4
	Armoured cable	

A separate form is required for each competency standard unit. The assessor should complete the following parts of this form in conjunction with the candidate to make sure they are clear about what is required:

- Competency Standard Unit Title and Unit Number
- Candidate’s Name
- Date
- Range Statement – Item Group: Please consult the Range Statement as described in section *Establishing the evidence requirements* of this document. Each group alpha character is to represent an appropriate ‘group’ of variables, such as ‘components’, ‘tools’, ‘system’, ‘plant’, ‘processes’, ‘equipment’, as required by the particular competency standard.
- Range Statement Items Involved: Please list the particular items that have been predetermined as being ‘Critical’ from the critical aspects of evidence section when the evidence requirements were established (see *Establishing the evidence requirements*).

Candidates place a tick in the column against those items they have been exposed to in a work environment. Candidates should add to the list of items involved, where appropriate. An example is provided below.

Candidate’s work experience with items in the Range Statement listed in this Competency Standard Unit

Competency standard unit title:		Unit no:
Candidate’s name:		Date:
Range Statement Item Group	Range Statement Items Involved	Candidate to Complete Identify the items you have worked on
A		
B		
C		

D		

Declaration by Candidate

All the information provided is entirely factual:

Name:

Signed *Date:*

Enclosure A6 – Supervisor’s Report

Comments made by the candidate’s supervisor/mentor are an important source of evidence for assessors. Typically, the ‘supervisor’ (mentor) approached to provide a report for competency assessment will have to spend considerable time guiding or monitoring the candidate in his/her development by providing supervised workplace learning experiences, appropriate to the candidate’s ability.

Supervisors should be asked to comment on the candidate’s ability to:

- demonstrate specific skills as described in the respective aspects of the competency standard units under assessment
- apply required essential underpinning knowledge and associated skills, e.g. as learnt in their technical studies, to the work undertaken
- work independently or in a team in a way that is productive and safe.

The Supervisor's Report can be completed as part of the pre-assessment planning process or during any other part of the process. More than one supervisor can provide information. Assessors should make sure supervisors are clear about the specific detailed requirements of the Electrotechnology Industry Competency Standards targeted for assessment.

A sample report form is provided below.

Supervisor's Report on _____ (Learner's Name)	
Name of Supervisor/Assessor: _____	Date: ___/___/___
Position in organisation: _____ Contact number: _____	

Approximate time (cumulative) providing guidance to the candidate _____ days / hrs
 in Unit(s): _____

Responses made by supervisors/mentors are for the purpose of providing information to a workplace assessor. The supervisor is not making a decision about competence. The assessor will include the information with other data in the decision making process.

Question asked of the supervisor/mentor	Responses		
	Yes	Requires further training	No
Taking into consideration the candidate technical development and work experiences, can they:			
Carry out duties with confidence			
Work in a safe manner with care for self and others			
Perform tasks with the minimal amount of waste or rework			
Complete tasks within a reasonable time			
Identify ways of improving how jobs are done			
Initiate action to improve processes or practices			
Work with others to achieve the work outputs of the group			
Work independently to achieve work outputs			
Resolve non-routine work functions			
Other comments:			
Supervisor's/Assessor's Signature:		Date: / /	

Enclosure A7 – ‘Supporting Skills’ Report

‘Supporting Skills’ refer to non-technical skills which are embedded in all the competency standard units. Demonstration of these is an essential part of competency assessment. Non-technical skills include:

- the ability to work independently or in teams while dealing with customers
- knowledge of and ability to follow enterprise policies
- communication skills used in following and issuing instructions
- knowledge of and ability to address quality assurance requirements
- personal management and development skills
- knowledge of and ability to address environmental protection and sustainable energy policies issues.

A Supporting Skills Report may be completed by an assessor, the candidate’s supervisor or another third party. Below is an outline of aspects covered by Supporting Skills.

Supporting Skills – What do they cover?

1. *Enterprise Instructions*

Technical manuals

Using enterprise or manufacturers’ technical manuals to ensure equipment and parts are installed to manufacturer specifications.

Quality systems

Plan, apply and contribute to quality systems.

Computers systems

Use enterprise documentation and record systems, including where appropriate the use of data-capture equipment such as computers, information systems and technologies.

Environmental and sustainable energy requirements

The safe disposal of used oil, grease and chemicals, the reduction of electrical energy by turning off lights and heating devices and minimising the impact that engineering practices have on the environment.

Occupational Health and Safety (OHS) requirements

Follow OHS and standard operating procedures in a manner that is safe to the individual and others.

Equal opportunity / Ethical practice / Cultural diversity

Become familiar with enterprise, equal employment opportunity policies, ethical practices and principles and cultural diversity.

Enterprise vehicles

Vehicle log book details are completed accurately, ensure the vehicle is kept clean and secured, and fuel and liquid levels are maintained.

2. *Customer relations*

Public

Provide courteous and informative advice during construction, maintenance or service activities.

Workers providing other services

Cooperate with workers providing other construction, maintenance or service activities.

Clients and land owners

Recognise the responsibilities and rights of clients and land owners.

Authorities

Recognise the responsibilities and rights of statutory and other authorities.

3. Self development

Systematic problemsolving

Solve problems using technical literature, exploring theories, performing calculations and by making enquiries.

Personal well being

Maintain and promote personal well being in the workplace through fitness and by avoiding excessive use of alcohol, tobacco and other harmful substances.

Time management

Be punctual, complete work activities on time/to deadline and sequence activities to maximise the use of available time.

Professional development

Seek to improve technical ability by discussions with others or by technical research and on-going competency development.

4. Team work

Communication

Communicate plans, information, intentions and safety criteria to others using appropriate means.

Team involvement

Contribute positively to the work-team environment.

Competency Enhancement

Participate in the training of others by sharing ideas, explanation of operating systems and detailing the working arrangements of components and equipment.

Instructions for Completing the Supporting Skills Report

When completing a Supporting Skills Report, the workplace assessor (or nominee) should refer to documentation, ask the candidate questions and/or seek advice from the candidate's supervisor/mentor.

Complete the form in the following way.

Step 1

Place a cross (X) in the box to indicate areas from where evidence has been sourced.

Supporting Skills Report	
Candidate's name	Date
Supervisor's/Assessor's name	/ /
Enterprise instructions 1. Applies correctly without constantly making reference to them. 2. Refers to them regularly and applies information correctly. 3. Awareness of their existence but not referred to or used.	Rating 1 2 3
Technical manuals	X
Quality systems	X
Computer systems	X
Environmental requirements	X

Identify a minimum of three.

Step 2

Review documentation and/or ask questions of the learner or their mentor/ supervisor.

Step 3

For each area, establish the appropriate level (1, 2 or 3) that reflects the capability of the learner. Place a circle around the corresponding number. Evidence should be collected from a number of sources before rating the candidate.

Note: A rating of 2 or 3 indicates further training or experience is required. A rating of 1 indicates the candidate has demonstrated their competence in this area.

Supporting Skills Report	
Candidate's name	Date
Supervisor's/Assessor's name	/ /

<p>Enterprise instructions 1. Applies correctly without constantly making reference to them. 2. Refers to them regularly and applies information correctly. 3. Awareness of their existence but not referred to or used.</p>		<p>Rating (circle #) 1 2 3</p>
<p>Technical manuals</p>		<p>Identify a minimum of three.</p>
<p>Quality systems</p>		
<p>Computer systems</p>		
<p>Environmental and sustainable energy requirements</p>		
<p>Occupational health and safety requirements</p>		
<p>Equal opportunity/Ethical practice/Cultural diversity</p>		
<p>Enterprise vehicles</p>		
<p>Customer relations 1. Customers are included in discussion effecting operational issues 2. Knowledge of but limited application of customer relations. 3. Requires more understanding of customer needs.</p>		<p>Rating 1 2 3</p>
<p>Public</p>		<p>Identify a minimum of two.</p>
<p>Workers providing other services</p>		
<p>Clients and land owners</p>		
<p>Authorities</p>		
<p>Self development 1. Desire to expand beyond the present job role. 2. Keeps abreast of new products and services. 3. Requires more understanding of the job role.</p>		<p>Rating 1 2 3</p>
<p>Systematic problem solving</p>		<p>Identify a minimum of two.</p>
<p>Personal well being</p>		
<p>Time management</p>		
<p>Professional development</p>		

Team Work 1. Shares ideas, assists and accepts assistance from others 2. Accepts ideas and assistance from others. 3. Prefers not to assist or accept assistance from others	Rating 1 2 3
Communications	Identify a minimum of two.
Team involvement	
Competency enhancement	

Enclosure A8 – Questioning

As part of the assessment process it may be necessary to gather additional evidence to clarify specific aspects of competence.

The RTO assessor (or their nominee) may need to ask questions of the candidate, their supervisor or their trainer. A form is provided in this enclosure for documenting their responses. The form provides guidelines for questioning a candidate about the Performance Criteria related to each Element of competence. Below are two tables which provide guidelines for assessing a candidate’s response to these questions.

If the assessment is formative, part of a training process, the response given by the candidate should be consistent with the ‘Appropriate coverage to questions – level 1’.

If the assessment is summative, final, the responses should be consistent with the ‘Appropriate coverage to questions – level 2’.

Note to assessors:

1. As competency standard units are typically structured around PLAN, CARRY OUT and COMPLETE jobs in the workplace, the form for recording responses is generic.
2. Please make reasonable adjustments to the form as required to accommodate particular aspects of individual Competency Standard Units.

Level 1 Appropriate Coverage of Responses to Questions

Element 1 – Planning for job/task functions (L1)

Issues about involvement of personnel, enterprises operational requirements and the requirements of regulators would not normally be expected.

Coverage should involve such things as:

OHS

- Clarifying instructions given if any doubt exists as to what is required.
- Checking with others involved if any personal protective equipment is needed.
- Identifying hazards and risks associated with the wok, including any first aid and other similar requirements

Tools, equipment etc

- Identifying the tools and equipment that are required.
- Explaining where any special equipment is located and how arrangements will be made to have them available, if required.

Element 1 – Planning for job/task functions (L1)**The work schedule**

- Identifying:
 - the work and relevant processes, procedures and personnel required
 - the process of work to be undertaken
 - the work site activities and issues to be attended to
 - the authorities associated with the work
 - any isolation procedures/permits that may apply.

Element 2 – Carrying out job/task functions (L1)

Coverage should involve such things as:

OHS

- Keeping:
 - the immediate work area clear of debris
 - tools clean and organised when not in use
 - clear of moving parts, live electrical conductors, hazards, and obstacles.
- Wearing work clothes and personal protective equipment when required.
- Performing the technical work required.
- Applying the relevant knowledge and skills underpinning performance.

Tasks

- Following instructions given by others.
- Observing what is occurring, listening to explanations about why tasks are performed in certain ways and asking questions when required.

Element 3 – Completing job/task functions (L1)

Coverage should involve such things as:

- Cleaning tools and equipment.
- Returning tools and equipment to their normal storage place.

Level 2 – Appropriate Coverage of Responses to Questions**Element 1 – Planning for job/task functions (L2)**

Coverage should involve, but not be limited to, such things as:

OHS

- Clarifying instructions given if any doubt exists as to what is required.
- Arranging for any special personal protective equipment to be available.
- Checking to see if the work site is accessible.

Element 1 – Planning for job/task functions (L2)**Personnel**

- Identifying other personnel involved in the work and coordinating proposed activities.

Regulatory requirements

- Arranging for relevant work instructions and installation specifications to be available, if required.
- Arranging work permits/isolation, etc.

Tools, equipment etc

- Ensuring that the tools and equipment that are required are available.
- Coordinating where any special equipment is located and how arrangements will be made to have them available, if required.

The Work Schedule

- Confirming:
 - the plan and process of work to be undertaken
 - the work and relevant processes, procedures and personnel required
 - the work site activities and issues to be attended to
 - the authorities associated with the work
 - isolation or work permits authorities.

Element 2 – Carrying out job/task functions (L2)

Coverage should involve, but not be limited to, such things as:

OHS

- Keeping the immediate work area clear of debris.
- Keeping tools clean and organised when not in use.
- Keeping clear of such things as moving parts, live electrical conductors and obstacles.
- Wearing work clothes and personal protective equipment when required.
- Having barriers in place to exclude public access to the work place, as required.
- Ensuring all personnel involved are alerted to work activities and communications are established and maintained.
- Keeping alert to the working environment while watching for unexpected occurrences.
- Confirming appropriate competence of first aid and persons, including other requirements such as confined space and the like, where appropriate.

Engineering tasks – specific actions should be included that are additional to the following

- Performing tasks independently with reference to enterprise instructions.

- Accept and act on initial advice and feedback provided by others.
- Observing what is occurring, listening to explanations about why tasks are performed in certain ways and asking questions when required.
- Applying essential knowledge and associated skills and providing solutions to "what if" scenarios.

Technical assistance

- Further reference to enterprise instructions.
- Reference to the requirements of regulations, work instructions or other relevant standard.
- Recall of theory or application.
- Involvement of others with greater experience.

Element 3 – Completing job/task functions (L2)

Coverage should involve, but not be limited to, such things as:

Performance checks

- Checking that all guards and covers removed during the activities are replaced & adjusted.
- Checking that all temporary arrangements required during the process work have been removed.
- Carrying out any tests required by regulation or work instructions.
- Operating the installed/repaired parts or system to ensure it functions as specified.

Notification

- Informing all immediate personnel involved that the work is completed.
- Informing clients and others that the work is completed.
- Removing all signs and barriers, as necessary.
- Reporting any damaged tools and equipment and arrange replacement.

Paperwork

- Completing store/inventory paperwork.
- Completing the work log or management reports by recording what occurred and providing recommendations/solutions to be followed up in point form.

Instruction for Recording Responses to Questions**Step 1**

Identify the elements of competence on which questions will be asked.

Step 2

Identify if the response expected is typical of the candidate undergoing a formative assessment (level 1) or summative assessment (level 2). This may be different for each element involved.

Step 3

Ask the main question and indicate (Y or N) whether the candidate’s response addresses the range and depth required.

Step 4

Ask follow up questions to probe any areas not recorded as Y in Step 3. Record Y or N to the response given in the space provided.

From all the evidence presented a holistic judgement is then made.

Questions

Unit Title: No.					
Candidate’s name: Assessors name:					
Main Question for the ‘Planning Work’ Element What are the main things you would	Expected Response Level			Not used	
	(circle)	1	2	(tick)	
<i>consider when you are planning and preparing for work?</i>					
Issues to be covered in response to the main question – and – follow up questions, if required					Coverage (Y or N)
What occupational health and safety issues do you consider?					
Who are the personnel you would involve?					
• What enterprise requirements need to be taken into account?					
What regulatory requirements need to be taken into account?					
What tools, equipment and other items need to be arranged to do this job, where will you get them from and how will you arrange to have them made available when you need them?					
What work schedule will be followed?					
Main Question for the ‘Carry-Out Work’ Element What are the main things you will do	Expected Response Level			Not used	
	(circle)	1	2	(tick)	
<i>to ensure the work you carry out is done productively?</i>					
Issues to be covered in response to the main question – and -					Coverage

Unit Title: No.	
Candidate's name: Assessors name:	
follow up questions, if required	(Y or N)
What are the main OHS practices and precautions that are specific to this work function?	
What are the main engineering tasks involved in carrying out this job?	
What would you do if the work you were undertaking became technically difficult and you could not complete it to requirements?	
What essential knowledge and associated skills would support a response to providing solutions to "what if" scenarios?	

Unit Title: (Cont.) No.					
Main Question for the 'Completing Work' Element What are the main things you will do What are the main things you will do	Expected Response Level			Not used	
	(circle)	1	2	(tick)	
<i>What needs to be done to finalise the job?</i>					
Issues to be covered in response to the main question – and – follow up questions, if required					Coverage (Y or N)
What checks need to be made to insure the work you undertook meets specified performance requirements?					
Who do you notify that the work has been completed?					
What paperwork needs to be completed and what will you write about?					

Enclosure A9 – Practical Demonstration

An assessor may need to observe a candidate demonstrating practical tasks. The Engineering Practical Skills Form is designed to help assessor's record work-based observations. In the Sample Form below, notes taken are analysed and a rating is given for the candidate's engineering skills.

Note to assessors:

- The form for recording responses is generic to all competency standard units.
- Make reasonable adjustments to the form as required to accommodate particular aspects of individual competency standard units.
- You may only need to observe candidates on particular (not all) elements of competence.
- If the assessment is formative (for feedback purposes), then the level of supervision that applies during work activities should apply during the assessment activity.

Instructions for Completing the Engineering Practical Skills Form

The form provides a means of recording information about a learner's engineering practice. A workplace assessor (or nominee) does this by observing pre-arranged activities and determining an engineering skills rating.

Step 1

Enter the title of the competency standard unit and the unit number in the space provided.

Step 2

Enter the learner's name in the space provided.

Step 3

Enter the name of the person who is completing the form. This may be the assessor or someone who the assessor nominates to gather the information.

Step 4

Enter the date on which the evidence is gathered.

Step 5

Determine the elements of competence being observed (circle yes or no).

Step 6

Determine the level of supervision that is to apply to the Elements being observed. Use the Supervision Level Code from the bottom left of the form (A, B or C) and enter it in the second column.

Step 7

Observe the learner perform tasks related to the element(s) being assessed, checking that they address the required Performance Criteria. Record in the first column of the table under the heading 'Notes from Observation' key points to indicate whether the learner has acted in a way that meets specifications required by manufacturers, regulations or client specifications by: following established enterprise procedures, meeting the requirements of the Competency Standard being assessed and not needing prompting during the assessment.

- Needed to be shown or told how to perform tasks beyond what is reasonably expected given his/her level of experience and therefore requires further training.

Step 8

Using the Engineering Skills Rating codes at the bottom right of the table, enter the appropriate letter in the space provided to indicate the level of competence demonstrated in relation to the Competency Standard being assessed.

From all the evidence presented a holistic judgement is then made.

Engineering Practical Skills Form		
Competency Standard Unit title: _____	Date: ____/____/____	
<i>Identify the name of the assessor:</i> _____ <i>Assessor's Name:</i> _____		
Notes from observation	Supervision Enter A, B or C	Engineering Practice Enter D, E, F, G
<i>Enter activities: Yes or No (circle to indicate if evidence is being gathered)</i>		
<i>Enter activities: Yes or No (circle to indicate if evidence is being gathered)</i>		
<i>Enter activities: Yes or No (circle to indicate if evidence is being gathered)</i>		
Supervision - Level		
The learner is working under direct supervision.	D	Met required specifications.
The learner is working under limited supervision	E	Followed established enterprise procedures.
The learner is working under general supervision with a high degree of autonomy	F	Met competency standard requirements
Learner's Signature	G	Further training required
Assessor's Signature		

Enclosure A10 – Final/Challenge Test

A test may be required if the assessment process does not provide:

- sufficient, authentic or current evidence
- particular aspects of evidence related to equipment operation
- particular aspects related to safety
- all the requirements related to the influence of external bodies such as regulatory authorities

A final test should:

- cover the conditions associated with the ‘Critical Aspects of Evidence’ statement in competency standard units
- take into account the principles of assessment and be sufficiently rigorous
- be consistent with the policies and practices of the RTO providing the recognition.

Enclosure A11 – Contracted Entry Level Profiling Model – Sample assessment instruments that support a profiling model

The industry-preferred assessment model for Australian Apprenticeships involves longitudinal approaches to assessment activities that are considered more efficient and effective. This is best achieved by implementing a process of frequently gathering reliable data from the workplace by the learner and having it verified in a form that can be easily and consistently interpreted.

One option is to use a machine-readable data scan card or direct web entry process operating in conjunction with a computer software program. The design of the system, known as Profiling, reflects the key requirements outlined in the relevant competency standard units making up the competency development plan/program. Learners report directly on their exposure to required work experiences in a structured way. Additional to the off-the-job technical training required for contracted entry level learners, Profiling gathers specific workplace information reliably and systematically.

Data gathered frequently from the workplace accumulates over the competency development period and is reported graphically at given periods. This approach encourages self review and participation in the system, eliminates bias and minimises the effects of low levels of literacy (see below for an example).

The information gathered under Profiling, forms one component of a two part, in some cases three part, Training Program that supports competency development in a way preferred by the industry. The components are:

1. off-the-job training (technical subjects/topics)
2. on-the-job training (workplace activities)
3. a specific final ‘safety systems (capstone)’ test, where applicable.

Typically, the off-the-job component requires the successful completion of technical subjects/topics of training against essential knowledge and associated skills (EKAS) clauses included in the relevant competency standard units. Usually the EKAS are aligned to EKAS Knowledge and skills specifications that expand on the essential knowledge and associated skills clauses, providing more detailed information on depth and breadth of learning required to be delivered by RTOs. The on-the-job component requires that a profile be developed from workplace experiences/exposures. Finally, a specific safety assessment test is conducted, where applicable, for regulatory and industry requirements.

On-the-job workplace data (experiences/exposures) is gathered for the required aspects of industry-determined competency standards, this data is then reported on relative to already developed industry norms. Typically the information gathered includes:

- activity measured against each element of competency against the performance criteria
- the range of equipment, processes, techniques and applications worked with/on in the workplace
- level of supervision of a learner's workplace experiences
- hours of exposure (recording hours only is not generally considered Profiling)

Data is entered against the prescribed criteria regularly (e.g. weekly) by the learner, the software program calculates the data against industry predefined norms and regular reports are produced (typically quarterly) for the use and information of RTOs, employers and the learner. Assessors use this information in a holistic way to identify and analyse trends and anomalies against the predefined industry norms.

The advantages of electronic Profiling over other methods such as manually based log-books are that the computer does the extensive and laborious analysis that the assessor would otherwise have to do and that it is simple and directly reflective of the workplace experiences undertaken by the trainee. It provides evidence for:

- managing workplace skill development/ performance of competency to required standards
- progressive assessment and supporting the attainment of a national qualification
- the attainment of an electrical workers' licence/regulated registrations, where appropriate
- the need for job rotation
- allocating work
- RTOs without invasive and expensive worksite visits by none worksite staff

To gain an appreciation of what a data card and a report may look like a sample of each is included over the page.

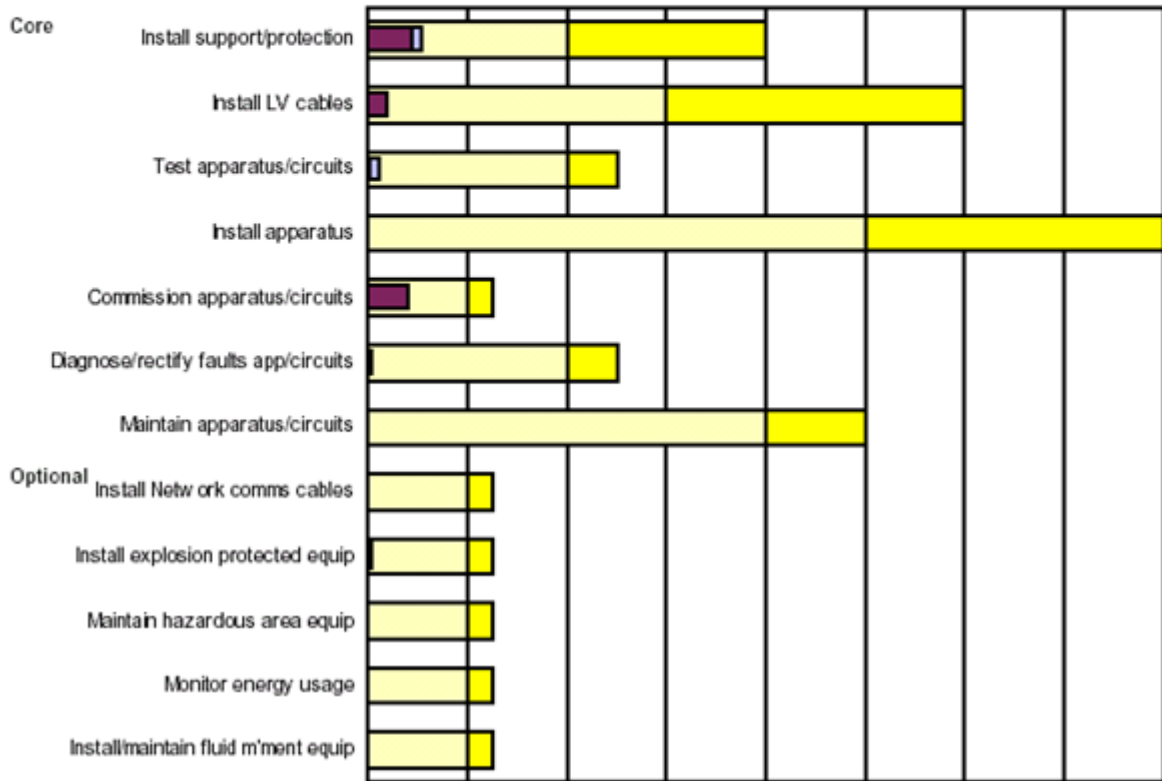
Sample Data Card and Quarterly Report – provided below

Note: details of fields determined by Industry to accommodate enterprise requirements

Sample Profiling Report

First Zzsample (999999)

**Apprentice On Job Experience Profile - Progressive and Benchmarks Points
Systems Electrician - Quarterly Report, May 2002**



Indicative progress learning values



* indicates Optional competency selected by the learner in Schedule C

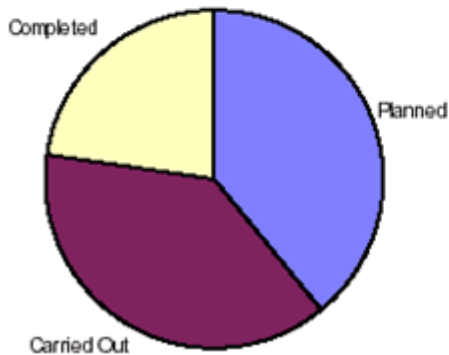
Apprentice Signature Date

Employer Signature Date

Host Signature (if applicable) Date

Apprentice role

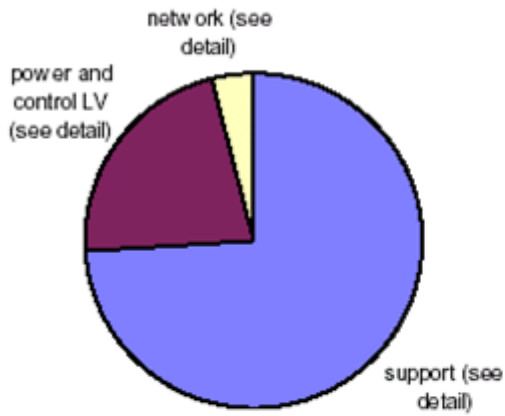
Supervision level



Sample Profiling Report (cont.)

First Zzsample (999999)

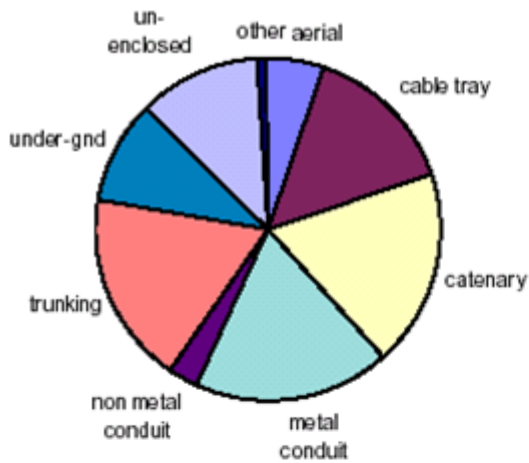
Electrical wiring system type



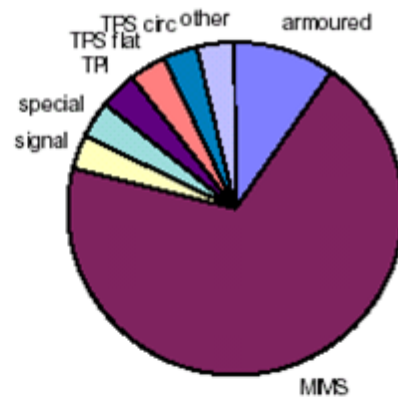
Electrical wiring detail: Network communications



Electrical wiring detail: Support and protection



Electrical wiring detail: Power & control - LV



Testing techniques used



Appendix B – Enclosure B: Administrative forms

Enclosure B1 Notification of workplace assessment

Enclosure B2 Application for recognition of prior learning/ current competence

Enclosure B3 Assessee comment/feedback

Enclosure B4 Candidate’s competency achievement report to a Registered Training Organisation

Enclosure B1 – Notification of workplace assessment

This form is used to notify a learner about their assessment. The learner is advised of the type of evidence being sought, the Competency Standard Unit(s) of competence being considered, who will be involved and the time and place of the activity.

Enclosure B2 – Application for recognition of prior learning/ current competence

Candidates should use this form to apply for recognition. The applicant needs to provide their personal details, the Competency Standard Unit(s) for which they seek recognition, the type of evidence being provided and the names of referees.

Enclosure B3 – Assessee comment/feedback

This form is used by the learner (or RPL applicant) to make comments about the workplace assessment process and/or decision. It should be distributed prior to an assessment being conducted. The workplace assessor should be sent a copy of each completed form and should retain these in case of any future review and/or inquiry.

Enclosure B4 – Candidate’s competency achievement report to an RTO

This form summarises a workplace assessment process and allows workplace assessors to make recommendations to an RTO about deeming competence of a learner or RPL applicant.

Enclosure B1 – Notification of a Workplace Assessment

Learners Name: _____ **Date of notification:** / /

Assessors Name: _____ **Tel:** _____

Qualification Title: _____

The workplace assessment will be carried out on the following Competency Standard Units		For the following reason (tick)	
Unit No.	Unit Title	Advice	Completion

Location _____ **Date:** / / **Time:** _____

Information has already been gathered from or is to be gathered from the following sources indicated below.

No	Source of Information	Already Gathered (tick)	To be Gathered (tick)
1	Work Activity Records - experiences mostly relate to re-occurring workplace events.	Paper Based	
		Electronic	
2	Technical Results (i.e. modules) – part of the program that develops your technical knowledge and skill		
3	Portfolio – personal and academic detail, employment and work achievements, references and the like		
4	Self Analysis – provides guidance on the type of evidence required and guides reference to other information		
5	Item Range - list of components, tools, systems, plant, test equipment, etc on which experience is gained		
6	Supervisor’s Report - general comments about applying technical skills, being safe and productive		
7	Soft Skills Report - your ability to follow instructions, deal with clients and work in teams		
8	Questioning - covers issues related to your performance when planning, carrying out and completing work		
9	Practical Demonstration - a demonstration of your ability to perform tasks in a actual or simulated situation		
10	Final Test – evidence related to critical aspects of what is required by you to demonstrate competence		
11	Other (list)		

Note: Once all the information is collected and the data analysed the results about your progress towards or achievement of competence will be forwarded to you for your comments. If you require any additional information you should contact the assessor (above telephone number) or your nominated supervisor/mentor.

Name _____ Signature _____

Enclosure B2 – Application for Recognition of Prior Learning/ Current Competence

Name: _____ Date of Birth: / /
 Address: _____
 Telephone: _____ Mobile _____ e-mail _____
Recognition Sought _____
Training Package _____
Qualification No. and Title _____

Competency Standard Units (Candidate to List)

Unit Title	Unit No.

Evidence Provided

Type	Tick if Attached
Certificates	
Relevant work history	
Transcript of Academic Record – modules completed/equivalent	
References	
(other)	

Referees

Name	Organisation and Title of Referees	Contact Number of Referees

Candidate's Signature: _____ Date: / /

Enclosure B3 – Assessee comment/feedback

To be completed by the candidate following an assessment event

Location: _____ **Date:** ___/___/___ **Time:** _____

•

Assessor's Name: _____

Please complete the following and return it to the Assessor.

Candidate's Name: _____

Contact N°: _____

I have read the Final Report for this assessment event and,
(tick)

Agree with the outcome.

or

Disagree with the outcome.

Comments:

Candidate's Signature: _____ **Date:** ___/___/___

Enclosure B4 – Candidates competency achievement report to RTO

This recommendation is made to (enter RTO name) _____

It is recommended that (learner's name) _____ (contact and identification details) _____

_____ be attributed competence in the following Competency Standard Units.

These Units are from the Qualification (Title and No.)

Unit No.	Competency standard unit Title	Assessors Initials

The recommendation was made based on analysed evidence taken from the following sources	Tick
Work Activity Records	
Knowledge and skills specification - Results	
Portfolio	
Self Analysis	
Item Range – Learner's Report	
Supervisor's Report	
Soft Skills Report	
Questioning	
Practical Demonstration	
Final Test	
Other (enter)	

Statement

The recommendation to attribute competence to the above mentioned individual is based on the evidence requirements outlined in Competency Standard Units from the _____ (Enter the Number and Title of the Training Package.)

Assessor's Name _____

Signature _____ **Date:** / /

Appendix B – Enclosure C Glossary of Terms

Definitions of all terms used in this section are set out below.

Term	Definition/Explanation
Appeal process	A process whereby the person being assessed or other interested party, such as an employer, may dispute the outcome of an assessment and seek reassessment.
Assessment	The process of collecting evidence and making judgements on whether competency has been achieved to confirm that an individual can perform to the standard expected in the workplace as expressed in the relevant endorsed industry/enterprise competency standards or outcomes of accredited courses.
Assessment context	The environment in which the assessment will be carried out. This will include physical and operational factors, the assessment system within which assessment is carried out, opportunities for gathering evidence in a number of situations, the purpose of the assessment, who carries out the assessment and the period of time during which it takes place.
Assessment guidelines	Assessment guidelines are the endorsed component of a Training Package which underpins assessment and which sets out the industry approach to valid, reliable, flexible and fair assessment. Assessment guidelines include the assessment system overview, assessor requirements, designing assessment resources, conducting assessment and sources of information on assessment.
Assessment judgement	Assessment judgement involves the assessor evaluating whether the evidence gathered is valid and authentic, and whether there is sufficient and reliable evidence to make the assessment decision. The assessment judgement will involve the assessor in using professional judgement in evaluating the evidence available.
Assessment	Assessment materials are any resources that assist in any part of the

Term	Definition/Explanation
materials	assessment process. They may include information for the candidate, assessment tools or resources for the quality assurance arrangements of the assessment system.
Assessment plan	An assessment plan is a document developed by an assessor that includes the elements and Competency Standard Units to be assessed, when the assessment will occur, how the assessment will occur, the assessment methods to be used and the criteria for the assessment decision.
Assessment process	The assessment process is the agreed series of steps that the candidate undertakes within the enrolment, assessment, recording and reporting cycle. The process must suit the needs of all stakeholders and be both efficient and cost-effective. The agreed assessment process is often expressed as a flow chart.
Assessment strategy	Assessment strategy means the approach to assessment and evidence gathering used by the assessor or RTO. It encompasses the assessment process, methods and assessment tools.
Assessment system	An assessment system is a controlled and ordered process designed to ensure that assessment decisions made in relation to many individuals, by many assessors, in many situations are consistent, fair, valid and reliable.
Assessment tool	<p>An assessment tool contains both the instrument and the instructions for gathering and interpreting evidence:</p> <ul style="list-style-type: none"> • Instrument[s] — the specific questions or activity developed from the selected assessment method[s] to be used for the assessment. A profile of acceptable performance and the decision making rules for the assessor may also be included. • Procedures — the information/instructions given to the candidate and/or the assessor regarding conditions under which the assessment should be conducted and recorded.
Candidate	<p>A candidate is any person presenting for assessment. The candidate may be:</p> <ul style="list-style-type: none"> • a learner undertaking training in an institutional setting • a learner/worker undertaking training in a workplace

Term	Definition/Explanation
	<ul style="list-style-type: none"> • an experienced worker wanting their skills recognised • any combination of the above.
Competency	The specification of knowledge and skill and the application of that knowledge and skill to the standards of performance required in the workplace.
Competency standard	Competency standards define the competencies required for effective performance in the workplace. Standards are expressed in outcome terms and have a standard format comprising of Unit title, Unit descriptor, Elements of Competency, Performance Criteria, Range Statement and Evidence Guide. See also Unit[s] of Competency.
Competency standard unit	Also see Unit of Competency
Critical aspects of competency	A statement in a Unit of Competency that provides clear meaning as to what is to be achieved in the assessment process.
Currency of evidence	Evidence that is relevant to what is outlined in competency units and not outdated or irrelevant.
Dimensions of competency	<p>The concept of competency includes all aspects of work performance and not only narrow task skills. The four components of competency are:</p> <ul style="list-style-type: none"> • task skills • task management skills • contingency management skills • job/role environment skills.
Electronic Profiling	An innovative electronic based logbook system used by apprentices to record, and report on their workplace activities. A specially designed data entry card is used to capture work experiences (e.g. weekly) against industry approved competency standards and reported against industry-defined benchmarks. <i>See</i> Section 3.5 Assessment Processes within the Electrotechnology Industry and section Appendix A — Enclosure A11 Contracted entry level Profiling Model.

Term	Definition/Explanation
Element of Competency	The basic building block of the Competency Standard Unit. Elements describe the tasks that make up the broader function or job described by the unit.
Essential Knowledge and Associated Skills clauses	EKAS clauses provide the content specifications that must be achieved by learners in terms of the body of essential knowledge and associated skills.
Essential Knowledge and Associated Skills knowledge and skills specification	EKAS knowledge and skills specification is specific learning content that is complete in itself and expands on the Competency Standard Units EKAS clauses in terms of depth and breadth. It may underpin many, few or one Competency Standard Unit(s). It covers one or more aspects of knowledge and skills. An EKAS KKS can be separately delivered and assessed with percentage achievement reporting, and may be linked with other EKAS KKSs for delivery purposes in the same discipline area.
Evidence / quality evidence	<p>Evidence is information gathered which, when matched against the performance criteria, provides proof of competency. Evidence can take many forms and be gathered from a number of sources. Assessors often categorise evidence in different ways for example:</p> <ul style="list-style-type: none"> • direct, indirect and supplementary sources of evidence • evidence collected by the candidate or evidence collected by the assessor • historical and recent evidence collected by the candidate and current evidence collected by the assessor. <p>Quality evidence is valid, authentic, sufficient and current. It enables the assessor to make the assessment judgement.</p>
Evidence gathering techniques	Evidence gathering technique means the particular technique or method used to gather different types of evidence. This may include methods or techniques such as questioning, observation, third party reports, interviews, simulations and portfolios.
Evidence Guide	Evidence Guide is part of a Competency Standard Unit. Its purpose is to guide assessment of the unit in the workplace and/or a training environment. The Evidence Guide specifies the context of assessment, the critical aspects of evidence and the required or underpinning knowledge and skills. The Evidence Guide relates

Term	Definition/Explanation
	directly to the Performance Criteria and Range Statement defined in the Competency Standard Unit.
Fairness	See section 3.4.1 Assessment Principles
Flexibility	See section 3.4.1 Assessment Principles
Holistic / integrated assessment	An approach to assessment that covers the clustering of multiple units/elements from relevant competency standards. This approach focuses on the assessment of a 'whole of job' role or function that draws on a number of units/elements of competence. This assessment approach also integrates the assessment of the application of knowledge, technical skills, problem solving and demonstration of attitudes and ethics.
Industry Skills Council/Industry Training Advisory Bodies (ITABs)	National bodies comprising representation from the industry parties responsible for the development, review, implementation, and providing advice on qualifications scopes and competency standards in given industries.
Module	A specific learning segment that is complete in itself. It deals with one or more aspects of knowledge and skills. A module is separately delivered and assessed and may be linked with other modules in the same study area and aligned to a competency standard unit(s).
Australian Apprenticeship Centre	An organisation that provides information on apprenticeships, traineeships and the related qualifications and processes.
Portfolio	See section 3.5 Assessment Processes in the Electrotechnology Industry.
Profiling	See section 3.5 Assessment Processes in the Electrotechnology Industry.
Performance Criteria	Evaluative statements which specify what is to be assessed and the required level of performance. The Performance Criteria specify the activities, skills, knowledge and understanding that provide evidence of competent performance for each Element Of Competency.

Term	Definition/Explanation
Qualification	Qualification means, in the vocational education and training sector, the formal certification, issued by a Registered Training Organisation under the Australian Qualifications Framework, that a person has achieved all the requirements for a qualification as specified in an endorsed Training Package or in an Australian Qualifications Framework accredited course where no relevant Training Package exists.
Range Statement	Part of a competency standard, which sets out a range of contexts in which performance can take place. The range helps the assessor to identify the specific industry or enterprise application of the Competency Standard Unit.
Reasonable adjustment	The nature and range of adjustment to an assessment tool or assessment method which will ensure valid and reliable assessment decisions but also meet the characteristics and background of the person(s) being assessed.
Recognition [Recognition of Prior Learning, Recognition of Current Competency and Skills Recognition]	Recognition is a term applied to Recognition of Prior Learning, Recognition of Current Competency and Skills Recognition. These all refer to acknowledgement of competencies currently held, regardless of how, when or where the learning occurred. Under the Australian Recognition Framework, competencies may be attained in a number of ways. This includes through any combination of formal or informal training and education, work experience or general life experience. In order to grant recognition of prior learning/current competency the assessor must be confident that the candidate can present evidence that he or she is currently competent against the endorsed industry or enterprise competency standards or outcomes specified in Australian Recognition Framework accredited courses. The evidence may take a variety of forms and could include certification, references from past employers, testimonials from clients and work samples. The assessor must ensure that the evidence is authentic, valid, reliable, current and sufficient.
Records of assessment	The information of assessment outcomes that is retained by the Organisation that is responsible for issuing the nationally recognised Statement of Attainment or qualification.
Registered	Registered Training Organisation (RTO) means a training

Term	Definition/Explanation
Training Organisation (RTO)	organisation registered in accordance with the Australian Recognition Framework, within a defined scope of registration (see Scope of Registration).
Reliability	See section 3.4.1 Assessment Principles
Sampling	See section 3.5 Assessment Processes in the Electrotechnology Industry.
Statement of Attainment	Statement of Attainment means a record of learning, recognised under the AQF, which although falling short of an AQF qualification, may contribute towards a qualification outcome, either as attainment of competencies within a Training Package, partial completion of an AQF accredited course leading to a qualification, or completion of a nationally accredited short course which may accumulate towards a qualification through Recognition of Prior Learning processes.
Sufficiency of evidence	See section 3.4.3 Assessment Judgments
Training Package	Training Package is an integrated set of nationally endorsed competency standards, assessment guidelines and Australian Qualifications Framework qualifications for a specific industry, industry sector or enterprise.
Training Agreement	An agreement outlining the training and assessment which forms part of an Australian Apprenticeship Training Contract and is registered with the relevant State or Territory Training Authority.
Training Plan	Training Plan means a program of training and assessment which forms part of an Australian Apprenticeship/traineeship Training Contract and is registered with the relevant State or Territory Training Authority.
Transcript of results — statement	List of candidate's modules/subjects/ EKAS knowledge and skills specifications completed as part of a Competency Standard Unit(s) or qualification.
Unit(s) of	Competency Standard Unit means the specification of knowledge and

Term	Definition/Explanation
Competency / Competency standard units	skill and the application of that knowledge and skill to the standard of performance required in the workplace. Competency Standard Units define the outcomes for training delivery and assessment and lead to the issuing of Australian Qualifications Framework qualifications and Statements of Attainment. See also <i>Competency Standard</i> .
Validity	See section 3.4.1 Assessment Principles
Validation	Validation involves reviewing, comparing and evaluating assessment processes, tools and evidence contributing to judgements made by a range of assessors against the same standards. Validation strategies may be internal processes with stakeholder involvement or external validations with other providers and/or stakeholders.

2.1.00 Preliminary Information and Glossaries

Electrotechnology Industry Standards UEE11

Volume 2 Part 1

Preliminary Information

This Volume (Vol 2 Part 1) contains the Definitions/Glossary of Electrotechnology Terms. In addition, the National Occupational Health and Safety Commission Glossary of Terms have been included. Users will find definitions here that clarify any Occupational Health and Safety specific terms. Where a term in the glossary is followed by a number, e.g. *Tools and equipment (2)*, the number indicates the AQF level.

Volume 2, Part 2 contains competency standard units and the Essential Knowledge and Associated Skills (EKAS). Each competency standard unit has a reference to the relevant Knowledge and Associated Skills, which are detailed separately from the competency standard units. This is designed to make the package easier to interpret and apply. In the Essential Knowledge and Associated Skills section of each unit there is reference to the relevant EKAS, identified by a unique clause number and title. This separate Essential Knowledge and Associated Skills forms an integral part of each competency standard unit, and all assessment evidence activities and reporting processes are to incorporate this specification.

Training Package Layout

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

The Training Package has been constructed as a two volume set. Volume 1 covers the overall Package framework and completion requirements for qualifications. Volume 2 includes the content details of parts and sub-sections of Volume 1. The two volumes form an integrated whole and are not to be used independently of each other.

Volume 1

Preliminary Information

Current Membership of the National Steering Group
The Electrotechnology Industry

Part 1 Qualifications Framework

Part 2 Competency Standards Overview and Index

Part 3 Assessment Guidelines

Appendix A — Australian Apprenticeships

Appendix B — Sample Assessment Instruments

Enclosures

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

Volume 2

Preliminary Information

Part 1 Definitions/Glossary

Part 2 Competency Standards

2.1 Competency Standard Units

A – Assembly

B – Broadcast

C – Commercial

D – Computer systems

E – Cross discipline

F – Data and voice communications

G – Electrical

H – Electronic

I – Instrument and control

J – Refrigeration and air conditioning

K – Renewable and sustainable energy

L – Imported

M – Hazardous areas

N – Rail systems

P – Restricted and specialist

R – Research

2.2 Essential Knowledge and Associated Skills (EKAS)

Part 3 Literacy and Numeracy Skills

Volume 1: Structure and Overview

Part 1 – Qualification Framework

Information in Part 1 outlines how the qualifications are structured, along with their scope/descriptions, composition and content. Completion and issuance requirements are provided as well as advice on flexibility arrangements, with entry and exit pathways and articulation arrangements. Titles and codes of the list of qualifications to be issued are also included.

Part 2 – Competency standards

Information in Part 2 outlines how the competency standards were developed (in broad terms). The industry coverage they apply to, as well as the format and construction of the individual competency standard units is provided. The index of Competency Standard Units and their scope/description is included in this part. Matters related to language, literacy and numeracy, access, equity and cultural diversity, and any regulatory arrangements, for which the competency standard units may apply is also included. Importantly, each competency standard unit is interrelated and linked with the Definitions/Glossary and Essential Knowledge and Associated Skills sections of the Volume. No competency standard unit is to be used in isolation or exported without these interrelated components.

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

Part 3 – Assessment guidelines

Information in Part 3 outlines how the assessment guidelines inform RTOs about the infrastructure requirements they will need to enable them to carry out training delivery assessment activities related to the Training Package. This includes assessment systems, the role of the RTO, assessment pathways, recognition arrangements, assessor qualifications and sources of information.

Included in Part 3 are: Appendix A Australian Apprenticeships Application and Appendix B Sample Assessment Instruments. Appendix B also contains Enclosures A, B and C: A – a List of Sample Assessment Instruments, B – Administrative Forms and C – Glossary of Terms.

Volume 2: Competency standard unit's content and scope

Volume 2 Part 1 contains the competency standards units in their respective disciplines: Assembly; Broadcast; Commercial; Computer systems; Cross discipline; Data and voice communications; Electrical; Electronic; Instrument and Control; Refrigeration and air conditioning; Renewable and sustainable energy; Imported; Hazardous areas; Rail systems; Restricted and specialist; Research

Volume 2 Part 2.2 contains the Essential Knowledge and Associated Skills and an Essential Knowledge Matrix mapping the essential knowledge and associated skills to each Unit.

Volume 2 Part 3 contains information and definitions relating to literacy and numeracy skills. Users should refer to this section when developing learning and assessment resources.

Important Note to Users

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

Check the version number before commencing training or assessment

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

Explanation of version number conventions

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

Note the change of National Code from UTE99 to UEE11 for this Training Package. In Volume 2, Part 2 the competency standard units and the Essential Knowledge and Associated Skills (EKAS) are found. The competency standard units refer to the Knowledge and Associated Skills in the relevant section of each competency standard unit. Just as the Definitions/Glossary section clarifies the Training Package use of terms the EKAS provides clarification as to the range and depth of coverage more briefly expressed elsewhere in the unit. Users should refer to these important requirements. The competency standard units themselves only refer to the clause number and reference title of the Essential Knowledge and Associated Skill the content of these clauses is found in Volume 2, Part 2.2.1. The separation of the essential knowledge and associated skills from the competency standard units has occurred to facilitate user friendliness for interpretation, applicability and future maintenance. This essential knowledge and associated skills forms an integral part of each competency standard unit and all assessment evidence activities and reporting processes are to incorporate this specification.

Definitions and OHS Glossary

The definitions and glossary in this Part are included to provide further elaboration of the meaning of particular words, phrases and terms used in the Training Package, especially in the competency standards units.

Scope

The Competency Standard Units in this Part of the Training Package cover the Electrotechnology Industry. The definitions provided in the Definitions/ Glossary are those that are to apply to the use of those terms within the Training Package. They are included to provide added clarity of the term and are the meanings generally understood and used by Industry; the regulators, and the community of practitioners.

Application

The information contained in each competency standard unit includes the intended use of the unit for assessment and a training program(s).

References

Regulations

The work functions described by competency standard units in this Training Package may be subject to statutory regulations. Where this is the case the particular regulations will depend on local jurisdictions and knowledge and application of such regulations within the scope of the unit shall be an aspect of evidence in deeming a person competent. Refer to in 1.4 Definitions

Reference documents

Each part of the Training Package will include a list of reference documents. These are a component of competency which assist in developing training programs and assessing competency, which include relevant legislation, regulation, industrial instruments, codes of practice, guidelines and advisory standards and policies. Examples may include industry preferred training and assessment models, anti-discrimination and equal employment opportunity statutes encompassing application of access, equity and cultural diversity principles associated with under-represented groups. They should be used wherever required and currency is to be assured in their application.

Definitions – Electrotechnology

The definition of terms used in this Part 2 of the Training Package form an integral part of the Training Package.

1.4.1 Access permits

A form type document giving formal permission to enter a specified work area when it is safe to do so and is part of the risk control measures for the area.

1.4.2 Accessories

Devices forming part of an electrotechnology system or installation but not including those defined as apparatus

1.4.3 Apparatus

Any device used to convert energy from one form to another and any device used for control or protection of a person, environment or a system.

1.4.4 Appliance

An energy using device, other than a lamp, in which electricity and/or gas is converted to any other form of energy.

1.4.5 Appropriate person

Individuals with responsibilities for design, installation, maintenance, production or servicing activities or a customer or a person of higher authority.

Note:

Examples of an appropriate person is a site manager, a project manager, a line manager, a supervisor a team leader and a customer's representative.

1.4.6 Approved

Acceptable to an authority having jurisdiction

1.4.7 Assessment of competence

The process of checking and confirming demonstrated performance in carrying out specified work activities and/or functions based on evidence that shows a person has carried out such work safely and to requirements.

1.4.8 Australian Qualifications Framework (AQF)

Australian Qualifications Framework Qualifications described in terms of levels characterised by the outcomes of vocational education and training. The Australian Qualifications Framework is intended to provide a comprehensive, nationally consistent, flexible framework for all qualifications in post-compulsory education and training.

1.4.9 Australian Quality Training Framework (AQTF)

A set of nationally agreed Standards to ensure the quality of vocational education and training services throughout Australia. The AQTF includes two sets of Standards:

Standards for Registered Training Organisation

Standards for State and Territory Registering/Course Accrediting Bodies

1.4.10 Authorised

Permission granted by a relevant higher authority to use particular equipment or to carry out specified work.

1.4.11 Authority

Agency representing the interest of another party and with the responsibility to make decisions on their behalf.

Note.

Examples are a customer's representative and agencies responsible for implementation of legislation

1.4.12 Cardiopulmonary Resuscitation (CPR)

An emergency life-support procedure using a combination of expired air resuscitation and external cardiac compression.

1.4.13 Checks, functional

The process of verifying that items of equipment operate as intended. Functional checking is used confined to basic systems.

1.4.14 Checks, visual

The process of identifying defects that is apparent to the eye. Visual checking is used confined to basic systems.

1.4.15 Competency

Competency comprises the specification of knowledge and skills and the application of that knowledge and skill to the standards of performance required in the workplace.

Competency includes all aspects of work performance and not only narrow skills. The four components of competency are: task skills; task management skills; contingency management skills and job/role environment skills.

1.4.16 Competency Standard Unit(s) See also units of competency

A competency standard unit is the group of skills and knowledge required by an individual to carry out a useful work function. Description of Units of Competency is given in Section 2 of this Standard.

A single Competency Standard Unit is not to be confused with a job description that will invariably comprise of a number of competency standard units.

Competency standards are made up of a number of Competency Standard Units. These units describe a key function or role in a particular job function or occupation. Each unit identifies a discrete workplace requirement and includes the knowledge and skills that underpin competency, as well as language, literacy and numeracy and Occupational Health and Safety requirements. A competency standard unit is usually linked to one or more AQF qualifications.

The fields in each competency standard unit and the types of information they contain are given in Table 1.1 below.

TABLE 1.1 Field Titles in a Competency Standard Unit and the types of information they contain

Field Title	Type of information
Unit code	Unit title
Unit Descriptor	1.1) Scope General description of the scope of the work function to which the competency applies and the general abilities needed. 1.2) License to Practice Indicates how technical standards, codes of practice and regulatory requirements apply to the Unit and whether a licence to practise is required.
Prerequisite Units	2) Prerequisites 2.1) Competency Standard units Specific and general competencies expected to have been achieved prior to undertaking training in the unit. 2.2) Literacy and numeracy skills Informs the reading, writing and maths skill level needed to achieve competence in the unit. (see Volume 2 Part 3).
Employability Skills	3) Generic competencies related to enabling skills

Field Title	Type of information
	for workplace employment activities
Application of the unit	4) Application The way in which the Unit is intended to be used in a learning program or qualification
Competency field	5) Discipline The sector of the electrotechnology industry to which the unit mainly applies.
Elements and Performance Criteria	6) Elements Outcomes that contribute to a unit. Performance Criteria Specify the required levels of performance for each Element.
Required skills and knowledge	7) Essential knowledge and associated skills Knowledge that is either explicit or implicit for effective performance.
Range Statement	8) Range Range of context and conditions to which performance criteria apply.
Evidence Guide	9) Evidence guide Assists with the interpretation and assessment of the unit
Overview of assessment	9.1) Overview Provides a summary of appropriate assessment methods and what they encompass.
Critical aspects of evidence required to demonstrate competency in this unit	9.2) Critical Aspects of Evidence Particular knowledge and skills essential to effective performance.
Context and specific resources for assessment	9.3) Context Environment and resources acceptable for assessing achievement of competency. Informs of the resources needed when simulating real the work place is considered and indicates when simulation of the workplace may be a viable or necessary.

Field Title	Type of information
Methods of assessment	9.4) Assessment Methods Indicates the acceptable methods of assessment which are specified in Section 3 of this document.
Concurrent assessment and relationship with other units	9.5) Concurrency Identifies where benefits may be derived by assessing two or more units concurrently or sequentially.

- **1.4.17 Competency Standards**

Competency Standards are the collection of competency standard units for a particular industry sector and are an integral part of a Training Package.

The competency standard units described in this document are part of the Electrotechnology Industry Training Package UEE11.

- **1.4.18 Complex**

Made up of many interrelated parts the behaviour or performance of which affect the behaviour or performance of the whole.

Note.

Examples in the context of electrotechnology are systems with many interworking subsystems, complex work activities such as some testing procedures and aspects of some essential knowledge.

- **1.4.19 Compliance**

An installation or equipment that conforms to relevant regulations which may include technical standards, codes or practice and the like.

- **1.4.20 Computer system**

Computer hardware, software and connectivity components that make up a system to operate, control or analysis a process.

- **1.4.21 Consistent performance**

Relates to sufficient evidence being present. This requires evidence that competence has been demonstrated for each element of each unit having been achieved at least twice; autonomously and to requirements.

- **1.4.22 Defects**

Physical or performance aspects of an installation or equipment that do not comply with the relevant regulations, standards or job specifications.

- **1.4.23 Documentation**

Written information, either hard or soft copy, related to a work function.

Note.

Examples of documentation are forms, work instructions, specifications, drawings, reports

- **1.4.24 Electrical installation, general**
All parts of an electrical installation in a building, structure and premises that are not designated as special electrical installations or those related to hazardous areas.
- **1.4.25 Electrical installation, special**
Electrical installation related to moveable premises and caravan parks, shows and carnivals, boating marinas, medical treatment areas, cranes and hoists, lifts, electric fences and construction and demolition sites.
- **1.4.26 Electronic sub assemblies**
An assembly of connected electronic components designed for a particular function that forms part of an electronic apparatus or system.
- **1.4.27 Enterprise standards**
Standards of management, performance, service or product established by an enterprise.
- **1.4.28 Endorsement**
The variations in equipment or function in which an individual demonstrates competence relevant to a competency standard unit. An endorsement applies to competency standard unit in the disciplines of 'Hazardous areas' and 'Restricted and special electrical work' and is shown by a suffix to the unit title. Details of endorsements are given in the competency standard units where they apply
- **1.4.29 Equipment**
Any component part or apparatus accessory of an electrotechnology system or installation
- **1.4.30 Established procedures**
Formal arrangements of an organization, enterprise or statutory authority of how work is to be done and by whom.

Note.

Examples of established procedures are documented in quality management systems, safety management systems, work clearance systems, work instructions, work procedures, standard operating procedures, reporting systems and arrangements for dealing with emergencies.

- **1.4.31 Essential knowledge and associated skills (EKAS) knowledge and skills specification (KKS)**
Provide specific advice in facilitating consistency and reliability in resource development and delivery. The knowledge and skills specifications are premised on the separate content of the essential knowledge and associated skills section of the expanded Volume 2 - Essential Knowledge and Associated Skills clauses, which are referred to in each competency standard unit.

The specifications are designed to:

- provide the depth and breadth of essential knowledge and associated skills to be learned
- ensure they support the needs of the workplace
- contain assessment strategies, including a table of specifications to increase validity, reliability and fairness
- detail the resources required for satisfactory delivery in the learning environment
- provide clarification regarding the type and quantity of evidence needed for assessment purposes

- support a variety of delivery modes, e.g. face-to-face, distance or computer- assisted learning
- provide content and structure that maximises learning retention
- provide a clear purpose statement about their relationship to the overall educational program.
- **1.4.32 Established routines**
Strict procedures for carrying out a work activity or task often formalised in the form of work instructions.
- **1.4.33 Explosion protection**
Techniques applied to the design of electrical equipment, components and systems to prevent the electrical energy from becoming an ignition source in the presence of flammable vapours and gases or combustible dusts in hazardous areas.
- **1.4.34 Fall prevention**
Safe working practices intended to prevent persons or objects from falling from a height regarded as hazardous.
- **1.4.35 Hazard**
Something with the potential to cause injury or disease to persons, damage property or disrupt productivity.
- **1.4.36 Hazardous area**
Area in which an explosive atmosphere is present or may be expected to be present in quantities such as to require special precautions for the construction, installation and use of electrical equipment. Hazardous areas may include a variety of adverse environmental conditions such as those encountered in coal mines, shipping, oil/gas platforms and the like, which commonly require further specifications stated in legislation or regulatory requirements.
- **1.4.37 Hazardous area records**
Records that show a hazardous area has been appropriately classified and the electrical equipment complies with the appropriate certification and other relevant requirements specific to the site. Generally referred to as a ‘Verification Dossier’
- **1.4.38 Industry standards**
Standards of management, performance, service or product established by a representative Industry Body. This Training Package is an example of an industry standard.
- **1.4.39 Inspection, actions taken**
Actions taken by an inspector in relation to defects in an installation

Note:

Examples of such actions are disconnection or non-connection of supply until a defect is rectified, notice of the period in which it has to be rectified, other actions within the scope of inspection authority.

- **1.4.40 Inspection, audit**
An inspection that reviews the regulatory obligations of enterprise. Audit inspections may involve reviewing records of work, inspection of safety equipment and inspection of recently completed work.

- **1.4.41 Inspection, close**

An inspection which encompasses those aspects covered by a visual inspection and, in addition, identifies those defects, e.g. loose fasteners, which will become apparent when access equipment, e.g. steps, and tools are used. Close inspections do not normally require an enclosure to be opened or equipment de-energised.

- **1.4.42 Inspection, detailed**

An inspection that encompasses those aspects covered by a close inspection and, in addition, identifies those defects that only become apparent when an enclosure is opened up, or by use of tools and test equipment.

- **1.4.43 Inspection, visual**

An inspection that identifies, without the use of access equipment or tools, those defects that are apparent to the eye.

- **1.4.44 Install**

1. The act of placing and permanently fixing equipment in place in a building or premises.
2. Placing and setting up an operating system and application software on a computer or network.

- **1.4.45 Installation**

Installation includes all equipment and component parts or a system as they are fixed in place and connected as necessary, to operate as intended.

Note.

Examples of installations are antenna installations, electrical installation, home entertainment installations and refrigeration installation.

- **1.4.46 Key competencies**

Generic competencies enabling effective participation in work and their incorporation in the Units of Competency (see Appendix A).

- **1.4.47 Knowledge and Skills Specification (KKS)**

See Essential Knowledge and Associated Skills (EKAS).

- **1.4.48 Maintain**

Ensuring systems, equipment or apparatus continue to work properly by checking, repairing faults, rectifying malfunction and making adjustments as required.

- **1.4.49 Maintenance, scheduled**

A formal process of periodically checking, overhauling and replacing equipment and/or components based on the assessment of risk associated with their failure during operation.

- **1.4.50 Non-compliance**

Aspects of an installation or equipment that do not satisfy the applicable regulations, standards or requirements.

- **1.4.51 OHS policies and procedures**

Arrangements of an organization or enterprise to meet its legal and ethical obligations of ensuring the workplace is safe and without risk to health. (See also Glossary of OHS Terms)

Note:

Ensuring a workplace is safe will include hazards identification and risk assessment mechanisms, implementation of safety regulations, safety training, safety systems incorporating work clearance procedures, isolation procedures, use of protective equipment and clothing and use of codes of practice.

- **1.4.52 Permit, clearance to work**

A system that authorises, in writing, specified work activities to be carried out in a specified work location at a specified time as part of the risk control measures. The system includes safety procedures that shall be followed before authorisation is given.

Note.

Examples include work permit systems operate in the electricity supply sector, in petrochemical plants, in refineries, in heavy manufacturing and in rail networks

- **1.4.53 Process control**

Control of actions used in the manufacture, analysis and modification of materials.

- **1.4.54 Process control system**

System used to control processes

- **1.4.55 Regulated environment**

Are those requirements that are to be met for regulated purposes including but not limited to licensing regimes; registration regimes; industrial instruments and/or arrangements; standards; codes of practice; industry wide preferred approaches encompassing industry policies and guidelines advised for respective Training Package non-endorsed implementation.

- **1.4.56 Reporting**

Formally written or computer entered and stored document detailing the outcomes of a work activity. (See 1.4.15 Documentation)

- **1.4.57 Requirements**

That to which equipment and procedures and their outcomes shall conform and includes statutory obligations and regulations and Standards called-up by legislation or regulations; or manufacturers', regulatory or industry requirements

Requirements may include codes of practice, industry policies, job specifications, Australian/New Zealand or International Standards called up in specifications be they - conformity notices, procedures and work instructions, and quality management systems, as well as transport documentation, manufacturers' specifications, maintenance manuals, schedules and specifications/standards, circuit/cable schedules, design specifications, customer/client requirements and specifications and national and state guidelines, policies and imperatives relating to the environment

- **1.4.58 Representative range**

That which requires a sufficient body of evidence undertaken across a range of activities and work functions to be present in order that a valid, reliable, fair and timely judgement about an individual's performance for attributing competence can be made. The range of systems, apparatus, equipment, accessories, applications, processes, and/or techniques referred to in the unit should be such that a peer group of industry practitioners would readily conclude that competency has been demonstrated. See competency standard unit for more information and in relation to the body of evidence required refer to the Assessment Guidelines of this Training Package.

- **1.4.59 Risk assessment**

Process of evaluating the likelihood and consequences of occurrences that would have an adverse affect on safety, health and the environment of a work area and the operation and viability of an enterprise.

- **1.4.60 Risk control measures**

Methods and equipment for preventing risk of injury or damage from a hazard. Many risk control measures have been established and formalised in standards and codes of practice.

- **1.4.61 Safe design principles**

Principles applied in the design of a product that take into account means to reduce harmful affects to both persons and the environment during its manufacture, its use and its disposal at the end of the life of the product.

- **1.4.62 Safe working**

System of procedures used to ensure safety in work and operation related to rail systems.

- **1.4.63 Servicing**

Maintaining, fault finding / troubleshooting and repair of equipment, plant machinery and/or installations.

- **1.4.64 Set-up**

Place in operation equipment that requires certain procedures to be followed before it can be used. Typical items of equipment that require setting up are appliance, computers and home entertainment equipment.

- **1.4.65 Simulation**

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

Note:

Six principles have been developed to govern the conduct of assessment in simulated environments; however, the underpinning principle in relation to off-the-job workplace simulation is that "actual tasks, activities and conditions are as close as possible to real life situations": 1. Reflect workplace conditions, 2. Reflect the intent of the Electrotechnology Training Package, 3. Involve Realistic and Authentic Activities, 4. Facilitate Profiling, 5. Support Holistic Judgements, and 6. Undergo Quality Assurance Processes.

- **1.4.66 Skills enabling employment**

A range of generic employment based skills that are expected of individuals in a workplace. (See Volume 2 Part 5)

- **1.4.67 Specifications**

All those attributes that define accurately the nature of the involved hazards, materials/products, processes, equipment and installation design.

Note:

Examples of specifications are design and manufacturer specifications defining all the necessary parameters and tolerances, process flow diagrams, explosive characteristics and technical data sheets for hazardous materials and products.

- **1.4.68 Standard, deemed to comply**

A guide setting out methods and materials that if applied in the prescribed way will satisfy the requirements of a performance-based technical standard.

- **1.4.69 Standards, technical**

Technical documents which set out specifications and other criteria for equipment, materials and methods, to ensure they consistently perform as intended. The Standards referred to are **those published by Standards Australia or an industry association.**

- **1.4.70 Sustainable energy, practices**

Working in a way that eliminates unnecessary energy use and material waste and disposes of the necessary waste with minimal effect on the environment and in compliance with regulation.

- **1.4.71 Training Package**

A Training Package is a set of nationally endorsed Standards and qualification for recognising and assessing people's skills. A training package specifies the outcome of training and is not a prescription of how an individual should be trained.

- **1.4.72 Unit of competency**

See competency standard unit.

- **1.4.73 Vocational standard**

See competency standard unit.

- **1.4.74 Voltage, extra-low**

Not exceeding 50 V a.c. or 120 V d.c.

- **1.4.75 Voltage, high**

Exceeding low voltage

- **1.4.76 Voltage, low**

Exceeding extra-low voltage, but not exceeding 1000 V a.c. or 1500 V d.c.

- **1.4.77 Work instructions**

Strict and formal instructions on how a work activity or task is to be carried out.

- **1.4.78 Work platform**

Equipment specifically designed to access a work area out of normal reach above the ground or floor level.

Note.

Examples are step ladders, extension ladders, scaffolding, pole platforms, 'cherry pickers' and the like.

- **1.4.79 Workplace procedures**

See 1.4.29 Established procedures

- **1.4.80 Work site protection**

Processes and procedure to manage or prevent the passage of trains over a section of (rail) track for which possession has been acquired so that maintenance or repair work can be carried out.

Additional Glossary terms for Occupational Health and Safety

Introduction

This Glossary of Occupational Health and Safety (OHS) Terms has been developed to assist competency developers and writers, reviewers of training packages and those developing any training specification or learning materials for the Vocational Education and Training Environment.

In Australia we consider that the rate of workplace fatality, injury and ill-health is far too high. To reduce this toll we need to make some changes in the workplace and this requires training to enable enterprises and workers to effectively manage safety.

We must ensure that OHS is clear in the competency so that the resultant learning contributes to improving the capacity of those in the workplace to manage safety. This applies not only to the 'designated' OHS units but to the integration of OHS, as appropriate, into all competencies, learning programs and learning resources.

The competency, TAADES505A *Research and develop competency standards*, specifies the outcomes and the knowledge and skills required to research and develop documents which outline competency requirements for a particular job function, work process, work role or specific vocational outcome. This competency cites four phases in developing a competency:

1. Research the competency area
2. Formulate competency specifications
3. Validate competency specifications
4. Finalise competency specifications.

OHS is a critical aspect of research into the competency area, and also an important aspect of work performance to be integrated within a competency.

To some extent OHS has its own language. OHS is 'owned' by many people as it impacts on all of us, however key words and terms are not always used in a consistent manner and this can lead to confusion. To maximise the effectiveness of our training and education we need to ensure that our use of the OHS language is as consistent and clear as possible.

This glossary is not intended as a definitive dictionary of OHS terms but is designed to be used in the second phase of competency development which is to formulate the competency specifications. It is also an invaluable tool for those involved in the design and development of learning resources.

Further information on OHS hazards, practical guidance material, standards and codes of practice is available at the National Occupational Health and Safety Commission website at www.nohsc.gov.au

The glossary is intended to be an evolving and dynamic document and those wishing to comment on the terms or suggest additions or modifications should email the Team Leader of the OHS Skills Development Team at NOHSC.

GLOSSARY OF OHS TERMS

NOHSC Glossary	Explanation
Accident	A term that is now considered out of date. Preferred term is 'incident'.
Accountability	The process by which a person with OHS responsibilities is answerable to a higher authority.
Action level	The level at which a risk is considered to be unacceptable and action is required to reduce the level of risk. May be specific such as a noise level at which hearing protection must be worn, a concentration of chemical or more generic.
(OHS) Action plans	Documented plans developed within the workplace to implement OHS management, which include allocated responsibilities and time frames.
Administrative controls	Management practices that aim to control employees' exposure to specific hazards, and generally improve health and safety – examples include the use of job rotation, job enlargement
ALARA (As Low As Reasonably Achievable)	A basic concept where risks are kept as low as is reasonably achievable. ALARA is determined by reference to established codes and standards and consultation with groups impacted by the decision outcomes including those exposed to the risk.
Anthropometry	The science dealing with the comparative measurement of the size and proportions of the human body, the range of movement of limbs, as used in ergonomics.
(OHS) Audit	A systematic examination against an agreed benchmark of the approach to managing safety to evaluate an organisation's arrangements for identifying hazards, assessing and controlling risks, and monitoring and improving the effectiveness of the management of OHS and compliance. (Note a workplace inspection is NOT an audit.)

NOHSC Glossary	Explanation
Audit tools	<p>The instruments for collecting evidence and conducting the analysis and evaluation (they are not the same as the audit criteria or benchmark), they may be:</p> <ul style="list-style-type: none"> • developed specifically for the purpose • adapted from existing tools • purchased or accessed from existing tools • and include: <ul style="list-style-type: none"> • performance checklists • sets of questions to be asked • descriptions of required characteristics to be checked • limitations for and instructions for use
Authorisation of permit	Signing of permit by competent person.
Biomechanics	The application of mechanics (forces and motion) to analyse body movement and the stresses involved in body posture during movement.
Causative event	Key event that resulted in the particular outcome(s) of injury or damage.
Circumstance	Short-term situation that is relatively unusual, such as a storm or when a key person is absent.
Certification	Refer 'operator certification.
Common law	Law that is derived from the English legal system and has evolved through judicial decision and practice (case law) that establishes and follows precedent. Note difference to 'statute law'.
Condition	Permanent situation such as type of equipment, work practice, design of work environment (often different to detect or identify) that may contribute to risk.
Consequence	The injury or damage outcome of an event, which may be expressed quantitatively or qualitatively; there may be a range of possible outcomes for a specific event or scenario.
Confined space	<p>An enclosed or partially enclosed space which-</p> <ul style="list-style-type: none"> • is at atmospheric pressure during occupancy • is not intended or designed primarily as a place of work, and is liable at any time to - • have an atmosphere which contains potentially harmful levels of contaminant

NOHSC Glossary	Explanation
	<ul style="list-style-type: none"> • not have a safe oxygen level or • cause engulfment, and • may have restricted means for entry and exit. <p>A confined space is determined in part by the hazards associated with a defined set of circumstances (restricted entry or hazardous atmosphere, risk of engulfment) and not just with work performed in a restricted space. Examples include but may not be limited to:</p> <p>storage tanks, tank cars, process vessels, boilers, pressure vessels, silos and other tank-like compartments open-topped spaces such as pits or degreasers pipes, sewers, shafts, ducts and similar structures shipboard spaces entered through a small hatchway or access point, cargo tanks, cellular double bottom tanks, duct keels, ballast and oil tanks and void spaces (but not including dry cargo holds).</p> <p>A person is deemed to have entered a confined space when their head (i.e. the breathing zone) or upper part of the body is within the boundary of the confined space. (Note that inserting an arm for atmospheric testing is not considered an entry to a confined space).</p> <p>References:</p> <ul style="list-style-type: none"> • AS/NZS 2865:2001 Safe working in a confined space • Handbook - HB 213:2003 Guidelines for safe working in a confined space
Consultative arrangements	<p>State and territory OHS legislation specifies obligations for workplace consultation. The workplace arrangements to meet these obligations may include:</p> <ul style="list-style-type: none"> • OHS and other consultative and planning committees • health and safety and other employee representatives • employee and supervisor involvement in OHS activities such as inspections and audits • procedures for reporting hazards, and raising and addressing OHS issues • employee and workgroup meetings. <p>Factors that should be considered when developing consultative arrangements include:</p> <ul style="list-style-type: none"> • language • shift work and rostering arrangements • timing of information and data provision • literacy and numeracy levels

NOHSC Glossary	Explanation
	<ul style="list-style-type: none"> • workers with special needs • workplace organisational structures (for example, size of organisation, geographic, hierarchical) • cultural diversity • management approach • workplace culture and approach to OHS by managers, supervisors and employees.
Controls	<p>The devices and methods of controlling the effect of the hazard so that the risk of injury is minimised. The ‘quality’ of the control is the level and reliability of the control compared with the level of risk. The quality of the controls is determined by:</p> <ul style="list-style-type: none"> • the best available technology or approach should be applied when the most probable outcome is death or serious injury • the best practical technology or approach may be applied where the most probable outcome is less serious <p>Refer also ‘Hierarchy of control’.</p> <p>Workplace factors that impact on the controls selected and the implementation include:</p> <ul style="list-style-type: none"> • language • shift work and rostering arrangements • literacy and numeracy • workplace organisational structures (e.g. geographic, hierarchical) • cultural diversity • training required • workplace culture related to OHS, including commitment by managers and supervisors and compliance with procedures and training.
Control measures	<p>Devices, systems (including work methods) or approaches that reduce exposure to workplace hazards</p>

Crisis management plan A flexible document that can cope with a broad range of crisis types and:

- is approved at the highest levels of the organisation
- focuses on management control
- identifies responsibilities for decision making
- details communication processes and psychological support
- addresses arrangements with any contractors or shared

NOHSC Glossary	Explanation
	<p>tenancy</p> <ul style="list-style-type: none"> • integrates the emergency response plans as well as recovery • incorporates dealing with external agencies and support • addresses planning for recovery before crisis occur. <p>Documentation for crisis management plan may include</p> <ul style="list-style-type: none"> • policy, emergency response structure, initial response instructions for various roles/areas, responsibility and authority of individual roles, warning systems, training requirements, resource inventory for response and recovery, program review and monitoring processes; and • crisis risk management documentation, such as risk management team lists, communications strategies, identification of issues, risk assessments/evaluations, vulnerability profiles, risk registers and treatment strategies. <p>The term ‘emergency management’ may also apply but ‘crisis management’ infers a more holistic approach encompassing the full range of business affairs.</p>
<p>Dangerous Goods (DG)</p>	<p>Those gases, liquids and solids identified and classified under the internationally agreed system which is followed in Australia and that are subject of so called ‘dangerous goods’ standards and legislation.</p> <p>The objective of the Dangerous Goods legislation is to control the storage, handling and transport of DGs to protect the safety of workers, the public, property and the environment. While dangerous goods may also be hazardous the terms should not be confused.</p>
<p>Dangerous parts of plant</p>	<p>Potential contact or entrapment points to which the operator may be exposed during:</p> <ul style="list-style-type: none"> • operation • examination • lubrication • adjustment • maintenance.
<p>Design</p>	<p>The process of bringing together innovation, aesthetics, and functionality to plan and create a product, processor system to meet the artistic, industrial or performance requirement of an individual or group. The Design Process involves a series of activities where an idea is conceived, shaped, developed, produced and then acted upon to produce a designed-product.</p>

NOHSC Glossary	Explanation
	It also includes any subsequent alteration of a designed-product (redesign or retrofit).
Design process	<p>The stages of the design process include:</p> <p>The concept design phase considers preliminary design options, which are assessed against product specifications to determine the best preliminary design to be developed. This phase includes concept design, research and development, feasibility and risk management (including OHS risks). The detailed design phase develops the selected design to its final state. It includes research and development, feasibility studies, concept and detail design, technical and functional specifications, plans and drawings, operational systems, construct/manufacture options and detailed quantities, cost and risk analysis (including analysis of OHS risks).</p>
Designed-product	<p>The item to be designed, including a built environment, structure, an item of plant or equipment, chemical, work system or process; or any other physical attribute or system associated with either the work or its interface with people.</p>
Duty of care	<p>Arises from common law but is enshrined in OHS statute law and / that places into a legal form a moral duty to anticipate possible causes of injury and illness and to do everything reasonably practicable to remove or minimise these possible causes of harm.</p> <p>The key factors relating to duty of care are that:</p> <ul style="list-style-type: none"> • duty of care applies wherever there is special relationship (employer – employee, employer-contractor, supervisor – work team member, tradesperson-apprentice) • duty of care applies to all circumstances of the relationship • individual duty of care cannot be delegated (but roles and functions may be delegated) • applies personally to individuals • applies to all risks that are foreseeable and preventable • includes the concept of ‘reasonable’.
Elements of systematic approaches to managing OHS including OHSMSs	<p>A list of key requirements or major principles that are combined in a methodical and ordered manner to minimise the risk of injury or ill health in the workplace; and may include processes of OHS planning, allocation of resources, communication and consultation, hazard management, record keeping and reporting, training and competency, and review and evaluation for ongoing improvement of OHS.</p>

NOHSC Glossary	Explanation
Emergency	<p>Events such as:</p> <ul style="list-style-type: none"> • serious injury events • emergencies requiring evacuation • fires and explosions • hazardous substance and chemical spills • explosion and bomb alerts • security emergencies, such as armed robberies, intruders and disturbed persons • internal emergencies, such as loss of power or water supply and structural collapse • external emergencies and natural disasters, such as flood, storm and traffic accident impacting on the organisation. <p>May also be referred to 'hazardous event'.</p>
Emergency agency	<p>Includes fire, police, ambulance, relevant government departments, hazardous materials response teams (HAZMAT) and OHS authorities</p>
Emergency control organisation (ECO) is:	<p>Structured group within the organisation that includes roles such as emergency controller, communications recorder, media liaison and employee support.</p>
Emergency equipment	<p>Includes:</p> <ul style="list-style-type: none"> • first aid equipment • eye wash shower or portable eye washes • fire extinguishers and equipment • communication equipment • evacuation alarms • evacuation equipment, especially that for disabled persons • torches • clothing items such as coloured hats and vests.
Emergency stops and warning devices	<p>Are fitted to plant and equipment that have a risk of entrapment or other hazard and must be:</p> <ul style="list-style-type: none"> • prominently, clearly and durably marked • coloured red (push buttons, bars or handles) • unable to be affected by electrical or electronic circuit malfunction • fitted where risk assessment identifies a need.
Enforcement	<p>Processes and instruments available to the OHS regulator under legislation may include:</p>

NOHSC Glossary	Explanation
	<ul style="list-style-type: none"> • prosecution • prohibition notices • improvement notices • on-the-spot fines • provisional improvement notices.
Epidemiology	The study of the distribution and determinants of disease within human populations. Patterns of injury or illness in groups of people are studied to determine causes, identify groups at risk and to identify and evaluate methods of treatment and prevention.
Ergonomics	The study of the relationship between people, the equipment they use and their physical and social work environment.
Ergonomic interventions	<p>Includes:</p> <ul style="list-style-type: none"> • design of tools • design of workplaces • design of products • design of equipment • design of work systems, processes or organisation including work flow, planning and control • job design • development of new decision making processes • new forms and organisations of work
Ergonomic tools and databases	<p>May include:</p> <ul style="list-style-type: none"> • engineering models • Australian and International Standards • Australian and International anthropometric databases
Explosive substance	Substance that explodes if it comes into contact with heat, flame, an ignition source or incompatible substance.
Fail-to-safe	Design feature of equipment that ensures if there is a failure or defect in the product, or another factor such as loss of power, then the product is left in a safe condition.
Functional areas and management systems	Other than OHS but that impact on the management of OHS may include: strategic planning purchasing, procurement and contracting logistics

NOHSC Glossary	Explanation
	<p>HR, IR and personnel management, including payroll engineering and maintenance information, data and records management finance and auditing environmental management quality management.</p>
Guarding	<p>Devices fitted to machinery to separate the operator from dangerous parts of the machine. Devices may include:</p> <ul style="list-style-type: none"> • permanently fixed physical barriers where no access of any part of a person is required • interlocking physical barriers where access to dangerous areas is required during operation • physical barriers securely fixed by means of fasteners or devices • presence-sensing safeguarding systems.
Hazard	<p>A source or a situation with a potential for harm in terms of human injury or ill-health, damage to property, damage to the environment, or a combination of these.</p>
Hazards of long latency	<p>Conditions, illnesses and other health risks that result from longer term exposure to specific triggers such as chemicals, noise, radiation and psychosocial factors.</p>
Hazards of low frequency/high consequence	<p>High impact events that occur rarely such as explosions, fires and building collapses but may result in very serious injury, death or multiple death situations.</p>
Hazard identification	<p>The process of identifying sources of harm. Hazard identification may be required:</p> <ul style="list-style-type: none"> • at design or pre purchase of buildings, equipment and materials • at commissioning or pre-implementation of new processes or practices • before new forms of work and organisation of work are implemented • before changes are made to workplace, equipment, work processes or work arrangements • as part of planning major tasks or activities, such as equipment shutdowns • following an incident report • when new knowledge becomes available • at regular intervals during normal operations • prior to disposal of equipment, buildings or materials.

NOHSC Glossary	Explanation
	Different methods may be used to identify hazards including observation; consultation with workers, clients or other users; trial of models or prototypes; review of technical standards and other information sources; monitoring and measurement.
Hazard identification tools and processes	<p>Include:</p> <ul style="list-style-type: none"> • analysis of incident investigations • analysis of incident, injury and claims statistics • workplace inspections • job safety analysis (JSA) • audits • cause and effect diagrams • surveys • review of research and industry literature
Hazardous event	Includes incidents with the potential to seriously harm life, health, property, the environment or a combination. May also be referred to as 'emergencies'.
Hazardous substance	A substance that is listed on the National Commission's <i>List of Designated Hazardous Substances</i> (NOHSC:10005) or has been classified as a hazardous substance by the manufacturer or importer in accordance with the National Commission's <i>Approved Criteria for Classifying Hazardous Substances</i> (NOHSC:1008).
Hazardous substance register	Listing of all the hazardous substances that are used or produced in a workplace together with a current Material Safety Data Sheet for each substance. May also contain risk assessments for individual hazardous substances.
HAZCHEM	An initial response emergency action code that provides information vital to emergency services to enable them to stabilise the incident scene during the early stages of a HAZMAT incident. The Code is displayed on emergency information panels on transport vehicles and on signs on buildings. HAZCHEM codes are assigned to chemicals on the basis of their flammability, toxicity, reactivity and other relevant chemical and physical properties.
HAZMAT	A contraction of the words 'hazardous materials' and may be used in a range of circumstances including HAZMAT emergency response units, HAMAT emergency response equipment and HAZMAT registers of hazardous substances.
HAZOP (Hazard and	An advanced risk analysis technique that involves a

NOHSC Glossary	Explanation
Operability Study)	systematic review of a process to determine risks and risk minimisation strategies.
Health and safety representative	An employee, elected by the workgroup, who represents the OHS interests of the people with whom they work. The function is carried out in addition to the normal work role. Processes for election of health and safety representatives, their role and rights are specified in state and territory legislation.
Health promotion	The promotion of health, especially as a workplace program, designed to improve and enhance employee health undertaken as a complementary activity to the prevention of work-related injury and disease. Also called wellness.
Health surveillance	Monitoring or checking individuals for the purpose of identifying changes due to exposure to hazards in the workplace. May include biological monitoring.
Hierarchy of control	The priority order in which hazard and risk controls should be considered with the eventual outcome often being a combination of measures. The prime emphasis is on: <ul style="list-style-type: none"> • elimination, and where this is not practicable, minimisation of risk by: • substitution • isolating the hazard from personnel • engineering controls • administrative controls (e.g. procedures, training) • personal protective equipment (PPE).
Hot work	Involves using equipment that generates heat, sparks, flames or any other sources of ignition in an atmosphere that may be flammable. Includes work with welders, cutters including oxygen cutters, power tools, grinding, mobile phones. Hot work can also include breaking into 'live' equipment or performing work on live equipment that has the potential to release its contents (e.g. hot tap in chemical plants).
Housekeeping	Describes workplace and personal routines designed to improve hygiene and safety, for example, cleaning up spills and keeping walkways, exits and traffic areas clear.
Incident	An event that has caused or has the potential for injury, ill-health or damage. ('Incident' is the preferred term rather than 'accident')

NOHSC Glossary	Explanation
<p>(Sources of OHS) Information:</p>	<p>May be internal and include:</p> <ul style="list-style-type: none"> • hazard, incident and investigation reports • workplace inspections • incident investigations • minutes of meetings • Job Safety Analyses (JSA's) and risk assessments • organisational data such as insurance records, enforcement notices and actions, workers compensation data, OHS performance data • reports and audits • material safety data sheets (MSDSs) and registers • employees handbooks • employees including questionnaire results • OHS advisors • manufacturers' manuals and specifications. <p>Or external, including:</p> <ul style="list-style-type: none"> • regulatory bodies and OHS Acts regulations, codes and guidance material • other relevant legislation • National Occupational Health and Safety Commission (NOHSC) and Australian Bureau of Statistics • databases such as national and state injury data and NICNAS (National Industrial Chemicals Notification and Assessment Scheme) • OHS specialists and consultants • newspapers and journals, trade/industry publications • internet sites • industry networks and associations including unions and employer groups • OHS professional bodies • research information.
<p>Isolation</p>	<p>A safety device system that includes devices such as isolating switches, locks, safety bars, shields, full pressure blanks, spectacle blanks to lock controls, especially moving parts, equipment, systems or devices with stored energy, to an 'off' position while a worker is in a vulnerable position such as carrying out maintenance on rotating equipment, and electrical and hydraulic systems.</p> <p>Isolation systems generally use locking switches that need keys to open the lock and are used in conjunction with a danger tag system that promotes greater safety consciousness</p>

NOHSC Glossary	Explanation
	<p>amongst the workforce for all situations in which danger to persons could arise from:</p> <ul style="list-style-type: none"> • the operation of machinery, plant or equipment • the flow of steam, electricity, gases or liquids • the use of faulty or unsafe plant and equipment • include multiple locking systems and involve written authorisation by a competent person <p>Also called 'lock-out' and 'tag-out'.</p>
Job Safety Analysis (JSA)	<p>Process of examining all aspects of a task to identify hazards and conditions with a potential for injury or ill health with the objective of developing risk controls including written job instructions.</p>
Legislation relevant to OHS	<p>Includes Commonwealth and relevant State / Territory OHS specific acts and regulations as well as:</p> <ul style="list-style-type: none"> • workers compensation • privacy legislation • contract law • trade practices • criminal law • common law • industrial relations law • equal employment opportunity and anti- discrimination law
Life-cycle	<p>All phases in the life of a product. Specific phases depend on the type of product but may include design, development, manufacture, construction, assembly, import, supply, distribution, sale, hire, lease, storage, transport, installation, erection, commissioning, use or operation, consumption, maintenance, servicing, cleaning, adjustment, inspection, repair, modification, refurbishment, renovation, recycling, resale, decommissioning, dismantling, demolition, discontinuance, disposal.</p>
Likelihood	<p>The likelihood of the occurrence of the consequence, not the likelihood of the hazard or the particular scenario.</p>
Locked out	<p>Equipment, which is not to be operated for any reason, may be pad-locked or otherwise prevented from operation using a keyed lock. A lockout may be accompanied by a tag out, or a lock out system may incorporate a tag. Lockout means the isolation by a mechanical device,</p>

NOHSC Glossary	Explanation
	<p>generally a lock, which, when applied at the source, physically prevents the control to any electrical or mechanical equipment being turned on. Refer also to 'Isolation'.</p>
Manual handling	<p>The use of force applied by a person to lift, move, carry, push, pull or otherwise move or restrains an animate inanimate object.</p>
Material Safety Data Sheet (MSDS)	<p>Document describing the properties and hazards of a material or substance including statements about its chemical and physical properties, health hazards, precautions for use and safe handling instructions. All manufacturers and suppliers of chemicals are obliged to produce an MSDS for each hazardous chemical.</p>
Monitoring	<p>Involves the use of valid and suitable techniques to estimate the exposure of employees to a hazard.</p>
Musculoskeletal disorder (MSD)	<p>An injury, illness or disease that arises in whole or part from manual handling in the workplace, whether occurring suddenly or over a prolonged period of time. (Does not include injuries caused by crushing, entrapment or cut resulting primarily from the mechanical operation of plant.</p>
Occupational Overuse Syndrome (OOS)	<p>Previously called RSI and refers to arrange of conditions characterised by persistent discomfort and pain in and around joints and associated with repeated movement of the joint. Recent state and territory legislation tends to group these conditions with those arising from manual handling as Musculoskeletal Disorders.</p>
OHS inspection	<p>The process of physically examining and evaluating the extent to which hazards and risks exist, and /or particular OHS requirements, procedures or standards are being met. Refer also to 'workplace inspection'.</p>
OHS specialists	<p>Include:</p> <ul style="list-style-type: none"> • safety professionals • ergonomists • occupational hygienists • safety engineers • injury management advisors • health professionals.
Operator certification	<p>The process by which a certificate to use or operate industrial</p>

NOHSC Glossary	Explanation
	equipment is issued by a certifying authority.
OHS management system (OHSMS)	<p>That part of the organisation's overall management system that covers developing, implementing, reviewing and maintaining the activities for managing OHS. It is NOT a standard, a commercial package or folders on the shelf; however it may involve use of OHS management systems developed in the workplace to meet the OHS situation in that particular workplace.</p> <p>Also referred to in broader context as systematic approaches to managing OHS.</p>
Operational controls for plant and equipment	<p>Should:</p> <ul style="list-style-type: none"> • be suitability identified • have nature and function clearly indicated • be readily and conveniently located • be guarded to prevent unintentional activation • be capable of locking in 'off' position to enable disconnection of all motive power and forces • be of 'fail safe' type.
Participative arrangements	<p>Are those arrangements that inform employees and other stakeholders of OHS matters, seek their input and offer opportunity for stakeholders to participate in decisions that may impact on their OHS. May also be referred to as 'consultative arrangements', however 'participation' implies a higher level of involvement.</p>
Permit to work	<p>A written authority document such as hot work and confined space entry that:</p> <ul style="list-style-type: none"> • includes approval to undertake work and activities including tests, measurements and monitoring • is authorised by a responsible or designated person directly in control of the work • certifies appropriate precautions and controls to be followed • incorporates checklists, conditions and actions such as the frequency and duration of the work and atmospheric tests • follows recognised industry standard recording practices.
Plant	<p>As defined in National Standard for Plant includes:</p> <ul style="list-style-type: none"> • machinery, equipment (including scaffolding), appliance, implement or tool and any other component, fitting or accessory • fixed and or specified plant as cited in commonwealth,

NOHSC Glossary	Explanation
	<p>state and territory OHS legislation</p> <ul style="list-style-type: none"> • mobile plant and load shifting equipment • pressure equipment such as boilers, pressure vessels and pressure piping • electrical installation and plant such as wiring, accessories, fittings, consuming devices, control and protective gear, converters and generators.
Plant Registration	<p>The administrative process by which a certifying authority or state OHS regulator requires an organisation or industry to register plant, machinery and equipment.</p>
Personal protective equipment (PPE)	<p>Equipment designed to be worn by a person to provide protection from hazards, and may include:</p> <ul style="list-style-type: none"> • head protection • face and eye protection • respiratory protection • hearing protection • hand protection • clothing and footwear.
	<p>Personal protective equipment is considered the least satisfactory control measure.</p>
Policies and procedures	<p>Relevant to OHS include:</p> <ul style="list-style-type: none"> • policies and procedures underpinning OHS including those for hazard and incident reporting, OHS communication, consultation, issue resolution and risk management • quality system documentation • purchasing and contracting procedures • documents describing how tasks, projects, inspections, jobs and processes are to be undertaken • standard operating procedures, work instructions • job or batch sheets, recipes • operators manuals • employee and contractor handbooks • job/task statements.
Positive performance indicators	<p>Focus on assessing how successfully a workplace is performing through measuring OHS processes.</p>
(OHS) Records	<p>Requirements for OHS record keeping may be defined in:</p> <ul style="list-style-type: none"> • OHS legislation and regulations governing reporting of

NOHSC Glossary	Explanation
	<p>incidents and maintenance of records related to specific hazards, including chemical registers and material safety data sheets (MSDSs)</p> <ul style="list-style-type: none"> • privacy legislation • organisational procedures. <p>OHS records may include:</p> <ul style="list-style-type: none"> • hazard and incident reports, first aid records • risk assessments • hazardous substances and dangerous good registers, MSDSs • risk registers • OHS audit and inspection reports • maintenance and testing records • OHS training records • outcomes of health surveillance and environmental monitoring • workers compensation claims and return to work records. <p>OHS records must be stored taking account of:</p> <ul style="list-style-type: none"> • privacy • confidentiality • enabling access to personal records, within legislative requirements • commercial in confidence issues as appropriate.
(OHS) Reporting requirements	Under legislation include serious injury and serious incident reporting to OHS authorities.
(OHS) Responsibilities	<p>Those with legislated OHS responsibilities include:</p> <ul style="list-style-type: none"> • company director • manager • supervisors • OHS representatives • employees and contractors • designers, manufacturers, installers, suppliers.
Residual risk	That risk that is unable to be designed out of a product or process.
Risk	The chance of something occurring that will result in injury or damage. It is measured in terms of consequences (injury or damage) and likelihood of the consequence.

NOHSC Glossary	Explanation
	Refer also to ‘Consequence’ and ‘Likelihood’.
Risk analysis	<p>Analysing the risk to:</p> <ul style="list-style-type: none"> • identify factors influencing the risk and the range of potential consequences • effectiveness of existing controls • likelihood of each consequence considering exposure and hazard level • combining these in some way to obtain a level of risk. <p>Factors influencing the risk may be associated with</p> <ul style="list-style-type: none"> • equipment • work environment • work organisation • task • the individual/operator • frequency and duration of exposure • number of people exposed/ involved.
Risk assessment	<p>Risk assessment is a two-step process that involves risk analysis and risk evaluation.</p> <p>Risk assessment as required under various OHS legislation does not necessarily require this second step of evaluation. Refer also to ‘Risk Analysis’ and ‘Risk evaluation’.</p>
Risk evaluation	<p>Comparison of risk with pre-established criteria for tolerance (or as low as reasonably achievable) and the subsequent ranking of risks requiring control. This activity will usually be carried out by or in conjunction with others with advanced OHS skills and knowledge.</p>
Risk management	<p>The whole systematic process directed towards identifying hazards, assessing the risk and developing controls to minimise the risk and monitoring the effectiveness of the controls (and taking further action as required).</p>
Risk ranking	<p>A process of rating risks according to their severity and likelihood. Common systems are based on matrices or nomograms but are usually highly subjective.</p>
Risk register	<p>Includes:</p> <ul style="list-style-type: none"> • a list of hazards, their location and people exposed • a range of possible scenarios or circumstances under which these hazards may cause injury or damage • the results of the risk assessment, and may also include;

NOHSC Glossary	Explanation
	<ul style="list-style-type: none"> • possible control measures and dates for implementation. <p>May also be referred to as Hazard Register.</p>
Safe Design	<p>A design process that generates options to eliminate hazards, or minimise potential risk to health and safety of those who make the product and those that use it by involving decision makers and considering OHS risks throughout the life cycle of the designed product.</p>
Stakeholders	<p>In workplace OHS include:</p> <ul style="list-style-type: none"> • managers • supervisors • health and safety and other employee representatives • OHS committees • employees and contractors • the community.
Standards	<p>Relevant to OHS include:</p> <ul style="list-style-type: none"> • OHS regulations and standards developed by OHS regulators • national standards (NOHSC) • Australian standards • International national standards • industry standards • codes of practice • exposure standards • guidance notes.
Statute Law	<p>Law created by legislation passed by government (acts and regulations) as distinct from common law.</p>
(OHS) plan:	<p>A document that:</p> <ul style="list-style-type: none"> • is usually developed annually but may be developed for a shorter or longer period • reviewed regularly • has OHS performance indicators (i.e. objectives and targets that are achievable and practical) reflecting systematic approaches to managing OHS.
System of work	<p>The overall process of work including:</p> <ul style="list-style-type: none"> • method by which the work is carried out • organisation of the work • selection and maintenance of tools and equipment

NOHSC Glossary	Explanation
	<ul style="list-style-type: none"> • supervision and training • selection of workers • allocation of tasks and responsibilities.
<p>Systemic approach to managing OHS</p>	<p>Requires:</p> <ul style="list-style-type: none"> • comprehensive processes that are combined in a methodical and ordered manner to minimise the risk of injury or ill health in the workplace • processes of planning, allocation of resources, communication and consultation, hazard management, record keeping and reporting, training and competency, and review and evaluation for ongoing improvement. <p>Factors that may impact on the implementation of a systematic approach to managing OHS may include:</p> <ul style="list-style-type: none"> • barriers to communication, such as language/literacy • workplace culture issues, such as management commitment, supervisors’ approach to compliance and general acceptance of the priority of safety • diversity of workers • structural factors, such as multiple locations, shift work and supervisory arrangements.
<p>Tag out</p>	<p>Refer to ‘Isolation’.</p>
<p>Technical advisors</p>	<p>To the OHS function may include:</p> <ul style="list-style-type: none"> • legal practitioners • engineers (such as design, acoustic, mechanical, civil) • security and emergency response personnel • workplace trainers and assessors • maintenance and trade persons.
<p>Wellness</p>	<p>Refer to ‘Health promotion’.</p>
<p>Workplace policies</p>	<p>Comprise written statements of employer’s intentions and how the employers will action those intentions in the workplace. For example: OHS, access and equity, discrimination and manual handling.</p>
<p>Workplace inspection</p>	<p>Process of examining the workplace, usually with the aid of a checklist, to identify hazards and level of compliance with workplace procedures.</p>

Some terms in the glossary have been taken from, or modified from the CCH Occupational Health and Safety Glossary, 1992 and National Guidelines for Integrating OHS Competencies into National Industry Competency Standards [NOHSC: 7025 (1998)] 2nd edition.

Volume 2 Part 2

Competency Standard Units

In this Electrotechnology Training Package (UEE11) there are approximately 500 competency standard units, arranged into sixteen (16) disciplines for ease of presentation and to facilitate quick access and referencing for users.

Disciplines

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

All of the competency standard units have been developed in accordance with DEEWR minimum requirements and include minor enhancements. All Parts in Volume 2 of this Training Package form an integrated component of each competency standard unit and must be included when developing learning strategies and assessment processes. Importantly, competency standard units interrelate and are linked with both the Definitions/Glossary and an Essential Knowledge and Associated Skills (EKAS) sections of the Volume. Each competency standard unit includes its unique combination of EKAS by clause number and title

EKAS have been separated from the competency standard units to facilitate user friendliness for interpretation, applicability and future maintenance, however the EKAS section forms an integral part of each competency standard unit and all assessment and reporting processes require the confirmation of the achievement of the relevant EKAS specifications.

No competency standard unit is to be used in isolation or exported without these interrelated components.

For detailed information on competency standard units, including their structure, refer to *Volume 1, Part 1 Qualifications* and *Volume 1, Part 2 Competency Standards*.

Coding Structure

The competency standard units have been coded with a Discipline code. Units in any one Discipline may range across a number of AQF levels. Refer to the section covering the Qualification Structure of Volume 1 Part 1 Qualification Framework to determine the relevant unit(s) pertaining to the qualification(s) required.

Unit Number										
U	E	E	N	E	E	H	0	2	4	A
Industry - EE-Oz Training Standards identifier			Training Package identifier			Discipline ← letters →	Unit Numbers 001 to 999			Version
← 12 Characters Maximum →										

U = Utilities – DEEWR Identifier

EE = EE-Oz Training Standards – ElectroComms and EnergyUtilities Industry Skills Council Identifier

N = National – Training Package identifier

EE = Electrical and Electronics

H = Discipline (e.g. H = Electronic)

Number = unit number identifier

A = Version

Possible Skills Set CSUs

Some competency standard units (CSUs) may appear within this section and/or within a qualification of this Training Package but they can be delivered and assessed independently of any qualification.

Typically, these CSUs relate to work functions associated with regulatory or specialised functions. They may augment or be incidental to existing competencies held by individuals or be required for workplace entry associated with OHS issues.

All identified prerequisite requirements must be met for each competency standard unit.

The independent competency standard units are listed in Volume1 Part 1 – Qualifications Framework. For the complete competency standard unit refer to the respective Discipline sections.

Essential Knowledge and Associated Skills

Introduction

The Essential Knowledge and Associated Skills (EKAS) are an integral part of each unit of competence and must be taken into account when developing learning strategies and assessment tools. The EKAS inform delivery to assure consistency, reliability and validity of outcomes. Following are the EKAS industry has determined as necessary for the development and deeming of competence.

Outline of Essential Knowledge and Associated Skills construction

As particular EKAS can be common across several units the Electrotechnology Industry has adopted a system of Clause Numbering and has allocated Clause Titles, these are mapped into each unit of competence in Section 7.1. The numbers and titles have been grouped into Topics that are indicative of the EKAS content for ease of use. Clause Numbers for this Training Package begin with 2 followed by a decimal that refers to the Topic area as shown below.

Clause number	Topic areas
2.1	Cables, conductors and terminations
2.2	Common, commercial, processes and enterprise specific knowledge and skills
2.3	Control technologies
2.4	Communications and computer technologies
2.5	Drawings, diagrams, schedules, manuals, standards and regulations
2.6	Electrical applications and apparatus
2.7	Electrical installations and systems
2.8	Electrical principles
2.9	Electronic principles and applications
2.10	Electronic communications technology
2.11	Equipment and tools
2.12	Instrumentation
2.13	Maintenance and repair
2.14	Rail signalling
2.15	Refrigeration and air conditioning apparatus

- 2.16 Refrigeration and air conditioning installations
- 2.17 Refrigeration and air conditioning principles and applications
- 2.18 Safety
- 2.19 Special requirements
- 2.20 Sustainable energy and environment
- 2.21 System, control and automated
- 2.22 Hazardous areas

ESI-Transmission Distribution and Rail Training Package

- T2.4 HV Switching

Refer Volume 2 - Part 2.2 Essential Knowledge and Associated Skills (EKAS)

Essential Knowledge and associated Skills to Unit Maps

The following appendices of the Electrotechnology Training Package consist of two mappings of the Essential Knowledge and Associated Skills:

- Appendix 1 - Competency Standard Units to Essential Knowledge and Associated Skills Relationship
- Appendix 2 - Essential Knowledge and Associated Skills to Competency Standard Units Relationship

This information is provided to assist users in developing holistic training support materials for respective qualifications and/or competency standard units.

Appendix 1 and 2

Refer to Appendix 1 - Unit to Essential Knowledge and Associated Skills Relationship and Appendix 2 - Essential Knowledge and Associated Skills to Unit Relationship

2.2.00 EKAS Contextualisation

EKAS Contextualisation

In some competency standard units there are 'notes' to specific content. These notes add value and clarity to the content. The notes may augment the scope, performance criteria, range statement, essential knowledge and associated skills or other related sections of the Competency Standard Unit.

The insertion of these ‘notes’ is primarily to provide users and support material developers with examples of the form and type related to technical content principles, technology, equipment, or processes that may be considered to be the range and depth of the outcomes. As the type, form, process, or technique of technology and equipment may change it is the responsibility of RTOs to continue to be current in the content of their delivery.

It is therefore prudent for RTOs to consider the ‘notes’ in relation to their delivery and assessment.

As with the units generally where contextualisation of the ‘notes’ varies the outcome of a competency standard unit RTOs should consult with EE-Oz Training Standards to explore options for incorporating and/or covering the new arrangements so that currency of the Training Package is maintained.

It should be noted that any need to alter the competency standard units from its intended outcome requires a new or varied competency standard unit. Such changes are to be undertaken through the continuous improvement processes required of Training Packages, which in relation to this Training Package is managed by EE-Oz Training Standards.

2.3.1 Reading, Writing and Numeracy

VOLUME 2 PART 3

3.1 LANGUAGE, LITERACY AND NUMERACY

The reading, writing and numeracy skills/competencies in each competency standard unit describe the recommended prerequisite entry requirements typically needed to successfully achieve competence in the unit. A nationally-recognised language, literacy and numeracy framework has been used to provide advice as to the relevant entry level required.

The information has been derived from the ‘*National Reporting System*’ report, ‘*A mechanism for reporting outcomes of adult English language, literacy and numeracy programs*’. The Australian National Training Authority (ANTA) and the Department of Employment Education and Training (DEET), 1994-5, jointly funded the report. Australian Training Products Ltd (ATP) distributes it for and on behalf of Language Australia Victorian Office. Stock code 3010A, ISBN: 0 7306 7493 2, April 1999.

The report:

- identifies adult English language, literacy and numeracy competencies in industry
- facilitates student pathways
- generates ideas for curriculum and assessment

The report identifies a national framework of five vertical levels of competence related to complexity of language, literacy and numeracy competence. Six interrelated horizontal aspects of communication were found to apply in relation to differing orientations of social activity involving reading, writing, speaking, listening and/or numeracy. These were categorised as follows: Procedural Communication for performing tasks; Technical Communication for using technology; Personal Communication for expressing identity; Cooperative Communication for interacting in groups; Systems Communication for interacting in organisations; and Public Communication for interacting in the wider community.

The National Reporting System Report: A mechanism for reporting outcomes of adult English language, literacy and numeracy, should be referred to at all times for clarification, more detailed information and advice.

For the purposes of providing relevant entry-level advice, specific features of writing, reading and numeracy competencies have been selected from the five-level competence structure using the Technical Communication aspect of the national framework, these are outlined in the Table below. Registered Training Organisations should use this information to assist them in developing appropriate entry-level learning strategies, to assist learners meet the entry-level requirements of specific competency standard units.

Table 1 – Reading, Writing and Numeracy – Indicators of Competence

These five levels of competence are interrelated with six aspects of communication of the National Reporting System (NRS). The NRS suggests that the *‘report of a person’s competence derives from the interplay between the chosen activity, the features of the text/task, and the context and level of support under which the activity is performed’*.

Note: These indicators of competency are not an assessment system and not a recruitment instrument for employers. They are not a curriculum; not a model of language acquisition; not a means for categorising students in terms of a simple ‘level’; not a set of ‘broad’ competency statements, but specific to reading writing and numeracy.

Reading

Scale	IoC*	Indicators of Competence	Technical Communication
5	5.1 5.2 5.3	Reads and interprets structurally intricate texts in chosen fields of knowledge and across a number of genres, which involve complex relationship between pieces of information and/or propositions. Interprets subtle nuances, infers purpose of author and makes judgements about the quality of an argument. Reads and critically evaluates texts containing data which includes some abstraction, symbolism, and technicality presented in graphic, diagrammatic, formatted or visual form.	Defines the purpose and objectives for the use of a report, which includes a detailed analysis of technology in the workplace or environment. Draws on prior knowledge of the application of technology to develop a new system, e.g. writes a briefing and recommendation system. Uses technological principles to reduce constraints on human physical capacity, e.g. writes a report, which compares the use of manual and computerised record management systems. Prepares a written or oral report, which critically evaluates the purpose of technical texts including graphic, diagrammatic and technical instructions. Adapts task instructions to suit changes in technology and provides instructions for the operation of a new machine based on technical instructions. Draws from a number of sources and uses computerised systems to write a report and job application letter.
4	4.1 4.2	Reads and interprets structurally intricate texts in chosen fields of knowledge which require integration of several pieces of information for generating meaning. Interprets texts, which include	Compares and contrasts views on technology in new products and services. Interprets the purposes and objectives for the use of technical texts such as a brochure or manual. Selects technological practices to conform to the requirements of the environment, environmental impact and ethical practice, and uses technical standards. Uses guidelines to ensure technological equipment is used safely.

Scale	IoC*	Indicators of Competence	Technical Communication
		ambiguity, and inexplicitness where reader needs to distinguish fact from opinion and infer purpose. Interprets and extrapolates from texts containing data which includes some abstraction, symbolism, and technicality presented in graphic, diagrammatic, formatted or visual form.	Uses a computer to prepare a typed report from a h Compares and contrasts different technologies and for new practices when using new technologies, rep new machinery. Writes a report on the impact of a particular techno management committees, tri-partite committees. Reads a complex diagram to identify components a technical fault or breakdown.

Reading – continued

3	3.1 3.2 3.3	Reads and interprets texts of some complexity, integrating (where relevant) a number of pieces of information in order to generate meaning. Displays awareness of purpose of text, including unstated meaning. Interprets and extrapolates from texts containing data which is unambiguously presented in graphic, diagrammatic, formatted or visual form.	Reads a technical manual where the information is well to be able to locate and comprehend particular programs a VCR to record two programs in advance Uses the author, title, key word and other search in Comprehends short summary information on comp choose a relevant package to suit own needs. Uses the word processing program on a computer t Writes simple instructions for using familiar techn teller machine. Completes a formatted workplace test, e.g. damage Writes a brief report on uses of technology, e.g. for community purposes.
2	2.1 2.2	Reads and interprets short simple texts on a personally relevant topic. Locates specific information relating to familiar contexts in a text which may contain data in simple graphic, diagrammatic, formatted or visual form.	Reads short, relevant, explicit, clearly formatted text author and title index of a library computer. Chooses a computer assisted learning package, hav two programs, to acquire a defined skill or area of Writes a short description, e.g. describes a damage repair. Extracts information from a list with language and lists of components for computer systems. Records simple and routine information using the t message, on a form designed for this purpose. Interprets instructions, which combine pictorial and on how to operate a piece of machinery safely.
1	1.1 1.2	Reads and identifies letter of the alphabet in the context of whole words, numbers, signs and symbols relating to personal details and immediate environment. Identifies specific information in a personally relevant text with familiar content, which may include personal	Recognisees very short, explicit, pictorial texts, e.g. worker safety before using a piece of machinery, re Reads graphic instructions accompanying a new pi information or skills about a technology or medium machine by following instructions given graphicall Types own name or single words into a computer-a

		details, location or calendar information in simple graphic, diagrammatic, formatted or visual form.	
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Note: IoC* - Indicators of Competency sub-level

Writing

Scale	IoC*	Indicators of Competence	Technical Communication
5	5.4	Demonstrates well-developed writing skills by selecting stylistic devices to express complex relationships between ideas and purposes. Generates complex written texts with control over generic structure.	<p>Defines the purpose and objectives for the use of a report, which includes a detailed analysis of technology in the workplace or environment.</p> <p>Draws on prior knowledge of the application of technology to develop a new system, e.g. writes a briefing and recommendation for a new system.</p> <p>Uses technological principles to reduce constraints on physical capacity, e.g. writes a report, which compares the efficiency of manual and computerised record management.</p> <p>Prepares a written or oral report, which critically evaluates the purpose of technical texts including graphic, diagrams and tables.</p> <p>Adapts task instructions to suit changes in technology and writes instructions for the operation of a new machine based on the original instructions.</p> <p>Draws from a number of sources and uses computerised technology in a report and job application letter.</p>
	5.5		
4	4.4	Communicates complex relationships between ideas by matching style of writing to purpose and audience. Generates written texts reflecting a range of genres and using appropriate structure and layout.	<p>Compares and contrasts views on technology in new products and services.</p> <p>Interprets the purposes and objectives for the use of technology in a brochure or manual.</p> <p>Selects technological practices to conform to the guidelines for environmental impact and ethical practice, and uses appropriate technology.</p> <p>Uses guidelines to ensure technological equipment is used safely.</p> <p>Uses a computer to prepare a typed report from a handwritten report.</p> <p>Compares and contrasts different technologies and identifies the advantages for new practices when using new technologies, repair and maintenance of new machinery.</p> <p>Writes a report on the impact of a particular technology on the environment, management committees, tri-partite committees.</p> <p>Reads a complex diagram to identify components and troubleshoot a technical fault or breakdown.</p>
	4.5		

Note: IoC* - Indicators of Competency sub-level

Writing – continued

Scale	IoC*	Indicators of Competence	Technical Communication
3	3.4 3.5	Communicates relationships between ideas through selecting and using grammatical structures and notations, which are appropriate to the purpose. Produces and sequences paragraphs according to purpose of text.	Reads a technical manual where the information is well to be able to locate and comprehend particular programs a VCR to record two programs in advance. Uses the author, title, key-word and other search in. Comprehends short summary information on comp choose a relevant package to suit own needs. Uses the word processing program on a computer t. Writes simple instructions for using familiar techn teller machine. Completes a formatted workplace test, e.g. damage. Writes a brief report on uses of technology, e.g. for community purposes.
2	2.3 2.4	Writes about a familiar topic using simple sentence structure and joining ideas through conjunctive links where appropriate. Completes forms or writes notes using factual or personal information relating to familiar contexts.	Reads short, relevant, explicit, clearly formatted tex author and title index of a library computer. Chooses a computer assisted learning package, hav or two programs, to acquire a defined skill or area o. Writes a short description, e.g. describes a damagee repair. Extracts information from a list with language and lists of components for computer systems. Records simple and routine information using the t message, on a form designed for this purpose. Interprets instructions, which combine pictorial and directions on how to operate a piece of machinery s.
1	1.3 1.4 1.5	Copies letters of the alphabet, numbers, and dates in order to convey personal details such as name, address, telephone number. Writes basic personal details about self or others such as name, address, and signature. Writes one or two phrases/simple sentences conveying an idea, message or opinion drawing from a modelled text.	Recognises very short, explicit, pictorial texts, e.g. worker safety before using a piece of machinery, re. Reads graphic instructions accompanying a new pi information or skills about a technology or medium machine by following instructions given graphicall. Types own name or single words into a computer-a.

Note: IoC* - Indicators of Competency sub-level

Numeracy

Scale	IoC*	Indicators of Competence	Technical Communication
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Scale	IoC*	Indicators of Competence	Technical Communication
5	5.10 5.11 5.12	<p>Interprets, selects and investigates appropriate mathematical information and relationships highly embedded in an activity, item or text.</p> <p>Selects and applies a wide range of mathematical strategies flexibly to generate solutions to problems across a broad range of contexts.</p> <p>Uses a wide range of oral and written informal and formal language and representation including symbols, diagrams and charts to communicate mathematically.</p>	<p>Calculates distance, length and location using the trigonometry of triangles in relevant situations, e.g. locates grid reference on an given bearing with time and speed specified;</p> <p>scaled plan of a roof to find the pitch or slope of the roof and selects materials to tile the roof applying a 4% allowance</p> <p>Plans and gathers information on a negotiated topic from government, industry and media about relevant companies</p> <p>Organises information by grouping. Graphically represents information for a particular purpose. Presents, individually or in a group, a viewpoint, which is substantiated by discussion of sources</p> <p>Interprets and applies metric quantities and number relationships. Calculates the amount of oil in litres spilled from a tanker of water of approximately 1200 hectares (1.2 x 10⁷m²)</p> <p>Uses financial formulae, e.g. simple and compound interest, to calculate the interest incurred in borrowing money from financial institutions</p>
4	4.10 4.11 4.12 4.13	<p>Selects and investigates appropriate mathematical information and relationships embedded in an activity, item or text.</p> <p>Selects and applies an expanding range of mathematical strategies flexibly to solve problems in a variety of contexts.</p> <p>Examines and questions the appropriateness, possible interpretations and implications of aspects of a mathematical activity.</p> <p>Uses a range of oral and written informal and formal language and representation including symbols, diagrams and charts to communicate mathematically.</p>	<p>Uses ratio and scale to interpret dimensions on a building plan</p> <p>Applies similarity and ratio to estimate and calculate the area of a building, a tree.</p> <p>Compares quality and costs of using imported vs. Australian name paints.</p> <p>Presents information in appropriate graphical form and interprets trends and influences, e.g. analysis of government spending</p> <p>Applies formulae and interprets results relevant to a range of situations measuring the dimensions needed and substituting units where necessary, e.g. length of edging for circular garden, water tank or bath.</p> <p>Uses area and perimeter to calculate a range of options for fencing, plan a range of options for paddock dimensions to meet requirements.</p> <p>Calculates and contrasts monthly income from average interest rate options involving retainers and commission rates.</p>

Note: IoC* - Indicators of Competency sub-level

Numeracy – continued

Scale	IoC*	Indicators of Competence	Technical Communication
3	3.10 3.11	<p>Selects appropriate mathematical information embedded in a real life activity, item or text.</p> <p>Selects and applies a range of mathematical strategies to solve problems in a number of contexts</p>	<p>Uses a distance scale to find the shortest route between two points, considers road terrain conditions in deciding preferred route</p> <p>Expresses and calculates with metric quantities, eg. compares the cost of cheese given different forms such as 350g, 0.35kg.</p> <p>Measures common three-dimensional shapes, eg. volume of a box on an appropriate diagram drawn to scale.</p>

Scale	IoC*	Indicators of Competence	Technical Communication
	3.12 3.13	which are familiar and may be interrelated. Reflects on and questions reasonableness and appropriateness of the purpose, process and outcomes of a mathematical activity. Uses oral and written informal and formal language and representation including symbols and diagrams to communicate mathematically.	Calculates with common, fractions and metric measures in a recipe by halving or doubling to obtain the required amount. Uses a variety of methods to analyse advertising by comparing different items, eg at 12% off, 15% off, 1/3 off, price reductions. Compares casual and permanent rates of pay over a period of time of the same nature.
2	2.9 2.10 2.11 2.12	Locates relevant mathematical information in a familiar real life activity text. Selects and uses straightforward mathematical actions in familiar and predictable contexts. Uses estimation and prior experience to examine purpose and check reasonableness of the process and outcomes of a mathematical activity. Uses oral and written informal and formal language and representation some symbols and diagrams to communicate mathematically.	Compares measurements taken with estimated lengths and measures storeroom dimensions.
1	1.10 1.11 1.12 1.13	Locates simple key mathematical information in a familiar real life activity text. Recognises and uses straightforward mathematical actions which relate to immediate contexts. Uses rough estimation and prior experience to identify purpose and check reasonableness of the process and outcomes of a mathematical activity. Uses everyday informal oral language and representation including familiar symbols and diagrams to communicate mathematically.	Estimates lengths of familiar objects using metric units such as doorway.