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UEE11 Electrotechnology Training Package

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## UEE11 Electrotechnology Training Package Version 1.5

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| Version | Release Date | Authorisation | Comments |
| --- | --- | --- | --- |
| 1.5  UEE11 |  | ISC Upgrade | New Skill Sets  UEESS00129 - Apply currency of safe working practices and compliance verification of electrical installations  UEESS00130 - Apply compliance requirements to all aspects of electrical work  Qualifications  The following qualifications have been amended to include updated units, electives and/or editorial changes.  UEE40611; UEE50411; UEE60411  Editorial amendments to units;  UEENEEG172A; UEENEEH111A; UEENEEH113A; UEENEEH116A; UEENEEH127A; UEENEEH129A; UEENEEH130A; UEENEEH131A; UEENEEH132A; UEENEEH133A; UEENEEH134A; UEENEEH138A; UEENEEJ109A; UEENEEJ111A; UEENEEJ112A; UEENEEJ113A; UEENEEJ114A; UEENEEJ115A; UEENEEJ116A; UEENEEJ117A; UEENEEJ118A; UEENEEJ119A; UEENEEJ120A; 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; UEENEEJ151A; UEENEEJ153A; UEENEEJ154A; UEENEEJ155A; UEENEEJ156A; UEENEEJ157A; UEENEEJ158A; UEENEEJ159A; UEENEEJ161A; UEENEEJ164A; UEENEEJ165A; UEENEEJ166A; UEENEEJ167A; UEENEEJ170A; UEENEEJ171A; UEENEEJ173A; UEENEEJ175A; UEENEEJ176A; UEENEEJ177A; UEENEEJ179A; UEENEEJ180A; UEENEEJ181A; UEENEEJ182A; UEENEEJ183A; UEENEEJ185A; UEENEEJ186A; UEENEEJ187A; UEENEEJ188A; UEENEEJ189A; UEENEEJ190A; UEENEEJ191A; UEENEEJ192A; UEENEEJ194A; 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; UEENEEM054A; UEENEEM055A; UEENEEM056A; UEENEEM057A; UEENEEM058A; UEENEEM059A; UEENEEM060A; UEENEEM061A; UEENEEM062A; UEENEEM063A; UEENEEM064A; UEENEEM065A; UEENEEM066A; UEENEEM074A; UEENEEM075A; UEENEEM080A |
| 1.4  UEE11 | 17 Apr 2014 | ISC Upgrade | Qualifications The following qualifications have been amended to include updated units, electives and editorial changes.  UEE10111; UEE20111; UEE20411; UEE20511; UEE20711; UEE20811; UEE20911; UEE21011; UEE21211; UEE21311; UEE21411; 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; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 Editorial amendments to units; UEENEEM043A; UEENEEM044A; UEENEEM045A; UEENEEM046A Training.gov.au metadata amendments to skill sets; UEESS00048; UEESS00049; UEESS00050; UEESS00051; UEESS00052; UEESS00053 |
| 1.3  UEE11 | 07 Sept 2013 | ISC Upgrade | Qualifications The following qualifications have been amended to include updated units, electives and editorial changes.  UEE20511; UEE21211; UEE21911; UEE30111; UEE30311; UEE30411; UEE30911; UEE61711 Editorial amendments to units UEENEEP010A. Editorial amendments to Skill Sets: UEESS00123; UEESS00124.  Amended table 2 of unit relationships to reflect correct mapping. |
| 1.2  UEE11 | 13 August 2013 | ISC Upgrade | Qualifications All qualifications have had a new release made to include Core/Elective mapping on TGA.  The following qualifications have been amended to include updated units, electives and editorial changes.  UEE30811; UEE30911; UEE31211; UEE33011; UEE40111; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE43011; UEE43111; UEE43211; UEE50111; UEE50211; UEE50411; UEE50511; UEE50711; UEE50911; UEE51011; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61511; UEE62011; UEE62111; UEE62211; UEE63011. Editorial amendments to units UEENEEE119A; UEENEEE141A; UEENEEG106A; UEENEEH113A; UEENEEI102A; UEENEEI103A; UEENEEI104A; UEENEEI105A; UEENEEI106A; UEENEEI119A; UEENEEI120A; UEENEEI123A; UEENEEI128A; UEENEEI129A; UEENEEI130A.  The phrase " For the full prerequisite chain details for this unit please refer to Table 2 in Volume 1, Part 2" has been removed from all units it was found. New Skill Sets: The following new Skill Sets have been created to meet industry and regulatory requirements  UEESS00113 – Hazardous Areas – Electrical equipment in dust atmospheres  UEESS00114 – Hazardous Areas – Electrical equipment in gas atmospheres  UEESS00115 – Hazardous Areas – Electrical equipment in hazardous areas – pressurisation  UEESS00116 – Data Communications – Premises Cabling for NBN Rollout  UEESS00117 – Hazardous Areas – Design and Classification  UEESS00118 – Data Communications – Plan an integrated cabling installation system  UEESS00119 – Data Communications – Test, report and rectify faults in data and voice installations  UEESS00120 – Data Communications – Plan an integrated cabling installation system – Electricians  UEESS00121 – Hazardous Areas – Inspect, repair and test reeling, trailing and flexible cables  UEESS00122 – Hazardous Areas – Verifying compliance of repaired reeling, training and flexible cable  UEESS00123 – Sustainable – Electrical Installations Sustainability Strategies  UEESS00124 – Instrumentation – Programmable control systems |
| 1.1  UEE11 | 7 March 2013 | ISC Upgrade | Qualifications The following qualifications have been amended to include updated imported units, electives and editorial changes.  UEE20111; UEE20411; UEE20711; UEE20811; UEE20911; UEE21011; UEE21211; UEE21311; UEE21411; UEE21711; UEE22011; UEE22111; UEE30111; UEE30211; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE30911; UEE31011; UEE31111; UEE31211; UEE31311; UEE31411; UEE31511; UEE32011; UEE32111; UEE32211; UEE33011; UEE40111; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41211; UEE41511; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE42911; UEE43011; UEE43111; UEE43211; UEE50111; UEE50211; UEE50311; UEE50411; UEE50511; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511. New Skill Sets:The following new Skill Sets have been created to meet industry and regulatory requirements UEE11 Restricted - Attachment of cords and plugs to single phase low voltage electrical equipment  UEE11 Restricted - Attachment of cords/cables and plugs to low voltage three phase electrical equipment.  UEE11 Restricted - Electrical safety testing of electrical cord connected equipment and cord assemblies  UEE11 Restricted - Disconnection/ reconnection of fixed wired low voltage appliances  UEE11 Restricted - Disconnection/ reconnection of fixed wired low voltage composite appliances  UEE11 Restricted - Disconnection/ reconnection of fixed wired low voltage control devices  UEE11 Restricted - Disconnection/ reconnection of fixed wired low voltage water heaters  UEE11 Restricted - Disconnection/ reconnection of fixed wired low voltage motors  UEE11 Hazardous Areas – Inspect, repair and test reeling, trailing and flexible cables  UEE11 Hazardous Areas – Testing and verifying compliance of reeling, trailing and flexible cables Skill sets amended: All existing skill sets in the package have had their requirements mapped to ensure correct presentation on Training.gov.au Units Imported CPPBDN5013A; Imported Units updated to current unit HLTCPR211A; HLTFA311A; MSS402001A; MSS402021A; MSS402080A; MSS402081A; MSS402040A; MSS402020A; CPPFES2043A; TLILIC2001A; Updated to the latest release NWP209B; NWP210B; NWP218B; NWP226B; NWP227B; NWP229B; NWP243B; NWP245B; NWP247A; NWP253B; NWP255B; NWP256B; NWP257B; NWP259B; NWP260A; NWP261A; NWP262A; NWP263A; NWP268B; NWP276A. Editorial amendments to Units UEENEED104A; UEENEEE117A; UEENEEG063A; UEENEEG105A; UEENEEI102A; UEENEEI103A; UEENEEI104A; UEENEEI105A; UEENEEI106A; UEENEEI107A; UEENEEI108A; UEENEEI110A; UEENEEI111A; UEENEEI112A; UEENEEI113A; UEENEEI114A; UEENEEI115A; UEENEEI116A; UEENEEI117A; UEENEEI118A; UEENEEI119A; UEENEEI120A; 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; UEENEEI148A; UEENEEI149A; UEENEEI150A; UEENEEI151A; UEENEEI152A; UEENEEI153A; UEENEEI154A; UEENEEI155A; UEENEEI156A; UEENEEI157A; UEENEEJ106A; UEENEEK104A; UEENEEK116A; UEENEEP017A; |
| 1  UEE11 | 16 March 2012 |  | All qualifications comply with the NQC’s Packaging Rules for Flexibility Formula in that:  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. New Qualifications 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; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011; Qualifications Amended UEE20111; UEE32111; UEE32211; UEE42711; UEE42811; UEE42911; UEE51111; UEE51211; UEE62211; UEE62311; UEE62411; UEE62511 Qualifications Removed UEE20207; UEE20607; UEE21107; UEE21510; UEE31710; UEE31810; UEE31910; UEE42410; UEE61410 New Units A - Assembly units  UEENEEA101A; UEENEEA102A; UEENEEA103A; UEENEEA104A; UEENEEA105A; UEENEEA106A; UEENEEA107A; UEENEEA110A; UEENEEA112A; UEENEEA113A  B – Broadcast Units  UEENEEB101A  D – Computer Systems Units  UEENEED101A; UEENEED102A; UEENEED103A; UEENEED104A; UEENEED110A; UEENEED111A; UEENEED112A; UEENEED113A; UEENEED114A; UEENEED115A; UEENEED116A; UEENEED117A; UEENEED118A; UEENEED119A; UEENEED120A; UEENEED121A; UEENEED122A; UEENEED123A; UEENEED124A; UEENEED129A; UEENEED130A; UEENEED143A; UEENEED144A; UEENEED145A; UEENEED146A; UEENEED147A; UEENEED148A; UEENEED149A; UEENEED150A; UEENEED151A; UEENEED152A; UEENEED153A; UEENEED154A; UEENEED155A;  E - Cross-Discipline units  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; 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; 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  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  N – Rail Signalling Units  UEENEEN101A; UEENEEN102A; UEENEEN103A; UEENEEN104A; UEENEEN105A; UEENEEN106A; UEENEEN107A; UEENEEN108A; UEENEEN109A; UEENEEN110A; UEENEEN111A; UEENEEN112A; UEENEEN114A; UEENEEN116A; UEENEEN118A; UEENEEN121A; UEENEEN126A; UEENEEN127A; UEENEEN128A  P – Restricted Electrical Units  UEENEEP010A; UEENEEP011A; UEENEEP013A; UEENEEP014A; UEENEEP015A; UEENEEP016A; UEENEEP018A; UEENEEP019A; UEENEEP020A; UEENEEP021A; UEENEEP022A; UEENEEP023A; UEENEEP026A Units Removed UEENEEA001B; UEENEEA002B; UEENEEA003B; UEENEEA004B; UEENEEA005B; UEENEEA006B; UEENEEA010B; UEENEEA012B; UEENEEA013B; UEENEEB001B; UEENEEC015B; UEENEEC028B; UEENEEC029B; UEENEED001B; UEENEED002B; UEENEED003B; UEENEED004B; UEENEED005B; UEENEED007B; UEENEED008B; UEENEED009B; UEENEED010B; UEENEED011B; UEENEED012B; UEENEED013B; UEENEED014B; UEENEED015B; UEENEED016B; UEENEED017B; UEENEED018B; UEENEED019B; UEENEED020B; UEENEED021B; UEENEED022B; UEENEED023B; UEENEED024B; UEENEED025B; UEENEED026B; UEENEED027B; UEENEED028B; UEENEED029B; UEENEED030B; UEENEED031B; UEENEED032B; UEENEED033B; UEENEED034B; UEENEED043B; UEENEED044B; UEENEED045B; UEENEED046B; UEENEED048B; UEENEED050B; UEENEED051B; UEENEED052B; UEENEED053B; UEENEED054B; UEENEED055B; UEENEEE001B; UEENEEE002B; UEENEEE003B; UEENEEE004B; UEENEEE005B; UEENEEE007B; UEENEEE008B; UEENEEE010B; UEENEEE014B; UEENEEE016B; UEENEEE017B; UEENEEE018B; UEENEEE019C; UEENEEE021B; UEENEEE022B; UEENEEE023B; UEENEEE024C; UEENEEE025B; UEENEEE026B; UEENEEE027B; UEENEEE028B; UEENEEE029B; UEENEEE030B; UEENEEE032B; UEENEEE033B; UEENEEE034B; UEENEEE035B; UEENEEE036B; UEENEEE037B; UEENEEE041B; UEENEEE042B; UEENEEE043B; UEENEEE044B; UEENEEE045B; UEENEEE046B; UEENEEE047B; UEENEEE048C; UEENEEE049B; UEENEEE050B; UEENEEE051B; UEENEEE060B; UEENEEE061B; UEENEEE062B; UEENEEE063B; UEENEEE064B; UEENEEE079A; UEENEEF002B; UEENEEF003B; UEENEEF004B; UEENEEF005B; UEENEEF006B; UEENEEF007B; UEENEEF008B; UEENEEF009B; UEENEEF010B; UEENEEF011B; UEENEEF012B; UEENEEF013B; UEENEEF014B; UEENEEF015B; UEENEEF016A; UEENEEG001B; UEENEEG002B; UEENEEG003B; UEENEEG004B; UEENEEG005B; UEENEEG007B; UEENEEG008B; UEENEEG009B; UEENEEG010B; UEENEEG011B; UEENEEG012B; UEENEEG013B; UEENEEG015B; UEENEEG016B; UEENEEG018B; UEENEEG019B; UEENEEG020B; UEENEEG021B; UEENEEG022B; UEENEEG023B; UEENEEG024B; UEENEEG025B; UEENEEG026B; UEENEEG027B; UEENEEG028B; UEENEEG029B; UEENEEG030B; UEENEEG031B; UEENEEG032B; UEENEEG034B; UEENEEG035B; UEENEEG036B; UEENEEG037B; UEENEEG038B; UEENEEG039B; UEENEEG040B; UEENEEG041B; UEENEEG042B; UEENEEG043B; UEENEEG044B; UEENEEG045B; UEENEEG046B; UEENEEG047B; UEENEEG048B; UEENEEG049B; UEENEEG050B; UEENEEG051B; UEENEEG052B; UEENEEG053B; UEENEEG054B; UEENEEG055B; UEENEEG056B; UEENEEG057B; UEENEEG058B; UEENEEG059B; UEENEEG060B; UEENEEG061B; UEENEEG062B; UEENEEG064B; UEENEEG065B; UEENEEG066B; UEENEEG067B; UEENEEG068B; UEENEEG069B; UEENEEG070B; UEENEEG071C; UEENEEG072C; UEENEEG075A; UEENEEH001B; UEENEEH002B; UEENEEH003B; UEENEEH004B; UEENEEH005B; UEENEEH006B; UEENEEH007B; UEENEEH008B; UEENEEH009B; UEENEEH010B; UEENEEH011B; UEENEEH012B; UEENEEH013B; UEENEEH014B; UEENEEH015B; EENEEH016B; UEENEEH017B; UEENEEH018B; UEENEEH019B; UEENEEH020B; UEENEEH021B; UEENEEH022B; UEENEEH023B; UEENEEH024B; UEENEEH025B; UEENEEH026B; UEENEEH027B; UEENEEH028B; UEENEEH029B; UEENEEH030B; UEENEEH031B; UEENEEH032B; UEENEEH033B; UEENEEH034B; UEENEEH035B; UEENEEH036B; UEENEEH037B; UEENEEH038B; UEENEEH039B; UEENEEH040B; UEENEEH041B; UEENEEH042B; UEENEEH043B; UEENEEH044B; UEENEEH045B; UEENEEH046B; UEENEEH047B; UEENEEH048B; UEENEEH049B; UEENEEH050B; UEENEEH051B; UEENEEH052B; UEENEEH053B; UEENEEH054B; UEENEEH055B; UEENEEH056B; UEENEEH057B; UEENEEH058B; UEENEEH059B; UEENEEH060B; UEENEEH061B; UEENEEH062B; UEENEEH063B; UEENEEH064B; UEENEEH065B; UEENEEH066B; UEENEEH067B; UEENEEH068B; UEENEEH069B; UEENEEH070B; UEENEEH071B; UEENEEH072C; UEENEEH073B; UEENEEH074B; UEENEEH075B; UEENEEH076B; UEENEEH077B; UEENEEH078B; UEENEEH079B; UEENEEH080B; UEENEEH081B; UEENEEH082B; UEENEEH083B; UEENEEH084B; UEENEEH085B; UEENEEH086B; UEENEEH087B; UEENEEH088B; UEENEEH090A; UEENEEH091A; UEENEEH092A; UEENEEI001B; UEENEEI002B; UEENEEI003B; UEENEEI004B; UEENEEI005B; UEENEEI006B; UEENEEI007C; UEENEEI008C; UEENEEI009B; UEENEEI010B; UEENEEI011B; UEENEEI012B; UEENEEI013B; UEENEEI014B; UEENEEI015B; UEENEEI017B; UEENEEI019B; UEENEEI020B; UEENEEI021B; UEENEEI022B; UEENEEI023B; UEENEEI025B; UEENEEI026B; UEENEEI027B; UEENEEI028B; UEENEEI029B; UEENEEI030B; UEENEEI034B; UEENEEI035B; UEENEEI036B; UEENEEI037B; UEENEEI038A; UEENEEI040A; UEENEEI041A; UEENEEI042A; UEENEEI043A; UEENEEI044A; UEENEEJ002B; UEENEEJ003B; UEENEEJ004B; UEENEEJ005B; UEENEEJ006B; UEENEEJ007B; UEENEEJ008B; UEENEEJ009B; UEENEEJ010B; UEENEEJ011B; UEENEEJ013B; UEENEEJ015B; UEENEEJ018B; UEENEEJ019B; UEENEEJ020B; UEENEEJ021B; UEENEEJ053B; UEENEEJ067B; UEENEEJ070B; UEENEEJ072B; UEENEEK001B; UEENEEK002B; UEENEEK003B; UEENEEK004B; UEENEEK005B; UEENEEK006B; UEENEEK007B; UEENEEK008B; UEENEEK009B; UEENEEK010B; UEENEEK011B; UEENEEK012B; UEENEEK013B; UEENEEK014B; UEENEEK016A; UEENEEK017B; UEENEEK020B; UEENEEK021B; UEENEEK022B; UEENEEK023B; UEENEEK025C; UEENEEK026B; UEENEEK027B; UEENEEK028B; 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; UEENEEP001B; UEENEEP002B; UEENEEP003B; UEENEEP004B; UEENEEP005B; UEENEEP006B; UEENEEP007B; UEENEEP008B Imported Units Added NWP210B; NWP276A; PMASUP410B; UETTDRIS43A; UETTDRIS44A; UETTDRIS47A; UETTDRIS67A; UETTDRIS68A; UETTDRIS69A; UETTDRIS70A; UETTDRIS71A; UETTDRIS72A; UETTDRIS73A; UETTDRIS74A; UETTDRSB39A Imported Units Removed BSBITU306A; BSBSMB405A; ICTTEN3089A; ICTTEN4081A; ICTTEN4085A; ICTTEN5083A; PMBQUAL390A; TLIB2034A; TLIB3040A; TLIB3048A ; TLIB3053A; TLIB3058A; TLIB3103A; TLIB3407B; TLIB4007B; TLIB4807B; TLIB5307B; TLIB5807B; TLIS2020A; TLIS507B; TLIS807B; TLIS907B; TLIX1107B; TLIX1607B; UEPOPS234A; UEPOPS235A; UEPOPS236A |
| 4  UEE07 | 31 July 2011 | NQC | New Qualifications 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  New Qualifications  UEE20110; UEE32110; UEE32210; UEE42710; UEE42810; UEE42910; UEE51110; UEE51210; UEE62210; UEE62310; UEE62410; UEE62510  Deleted Qualifications  UEE20107; UEE21810; UEE30510; UEE31307; UEE41310; UEE42310; UEE42510; UEE50610; UEE60110; UEE60710; UEE61910 New UnitsCross Discipline Units Amended Units  UEENEEE011C  New Units  UEENEEE080A; UEENEEE081A; UEENEEE082A; UEENEEE083A; UEENEEE101A; UEENEEE102A; UEENEEE104A; UEENEEE105A; UEENEEE107A; UEENEEE125A; UEENEEE126A; UEENEEE137A; Electrical Units New Units  UEENEEG006A; UEENEEG033A; UEENEEG063A; UEENEEG076A; UEENEEG101A; UEENEEG102A; UEENEEG103A; UEENEEG104A; UEENEEG105A; UEENEEG106A; UEENEEG107A; UEENEEG108A; UEENEEG109A; UEENEEG149A; UEENEEG171A; Electronic and Communications Units New Units  UEENEEH091A; UEENEEH092A Instrumentation Units New Units  UEENEEI038A; UEENEEI040A; UEENEEI041A; UEENEEI042A; UEENEEI043A; UEENEEI044A; Refrigeration and Air Conditioning Units 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; 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; UEENEEJ091A; Restricted Electrical Units New Units  UEENEEP012A; UEENEEP017A; UEENEEP024A; UEENEEP025A;  Deleted Units  UEENEEP009B Rail Signalling New Units  UEENEEN021A Deleted Imported Units 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 Addition of the following Imported Units RIIRA1609A; RIIRIS601A; RIIOHS202A; RIIOHS205A; RIIOHS204A; CPCOHS10001A; HLTCPR201A; HLTFA301A; TLILIC508A ; TLID3507C; PRMPFES43A; MEM16006A; MEM16008A; MEM30001A; MEM30002A; MEM30003A; MEM30004A; MEM05012C; MEM05007C; Update of Existing Imported units BSBWOR502B; BSBMGT516C BSBSMB405A; ICTTEN3056A; ICTTEN5083A; ICTTEN4085A; ICTTEN4081A; ICTTEN3089A; |
| 3.1  UEE07 | 4 August 2010 | EE-Oz ISC Upgrade  Authorised by NQC to meet Packaging Rule requirements and the inclusion of Sustainability Skills in qualifications. | Modification of the following qualifications to comply with NQC Packaging Rules.  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 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  UEE40110 Certificate IV in Computer Systems  UEE40710 Certificate IV in Electronics and Communications  UEE41510 Certificate IV in Video and Audio Systems  UEE50110 Diploma of Computer Systems Engineering  UEE50510 Diploma of Electronics and Communications Engineering  UEE60210 Advanced Diploma of Electronics and Communications Engineering  UEE60410 Advanced Diploma of Computer Systems Engineering  Modifications to qualification to meet NQC requirements include:  Stream Core requirement deleted from the above qualifications and stream core units included in core or elective to maintain qualification integrity.  Inclusion of provision for importation of up to one sixth of total qualification points from other qualifications, other Training Packages and accredited courses.  Inclusion of one third of total qualification points as elective.  Creation of an imported and common units group for each qualification.  Creation of elective groups with specific qualification electives for each qualification.  Application of a revised points weighting system for both core and elective units in each qualification.  Embedding of Sustainability Skills units into the core of the following qualifications:  UEE10110; UEE20510; UEE21310; UEE21610; UEE21710; UEE21910  UEE22010; UEE30210; UEE30310  UEE30910; UEE40110; UEE40710; UEE41510; UEE50110; UEE50510; UEE60210; UEE60410  Addition of the following Imported Units  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 |
| 3  UEE07 | 11 June 2010 | NQC | This review includes amendments to the UEE07 Electrotechnology Training Package as follows:  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:  Application of unit  essential knowledge and skills clauses within the Cross Discipline (E) units  Concurrent assessment and relationship with other units  Due to the requirement for amendments to  Prerequisites (and, consequently Prerequisite chains)  Application of the unit  essential knowledge and skills clauses  correction to wording in range statement.  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  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, UEENEEM074A, UEENEEM075A, UEENEEM076A, UEENEEM077A, UEENEEM078A, UEENEEM079A, UEENEEM080A  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  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,  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,  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)  6. Electrical Units  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).  7. Instrumentation and Industrial Control Units  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)  8. Electronic and Communications Units  Addition of one (1) new competency standard unit for Electronics and Communications areas:  UEENEEH090A.  9. Hazardous Area qualifications  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  10. Refrigeration and Air conditioning qualifications  Amendments to Refrigeration and Air conditioning 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  UEE21810, UEE30510, UEE40510, UEE41310, UEE50310, UEE50610, UEE60710,  Deleted Qualifications  UEE41407, UEE60807,  New Qualifications  UEE42310, UEE42510, UEE61910,  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,  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,  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,  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  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  16. All Qualifications – All pre-requisite competencies required to complete core competencies are explicitly included in core of the relevant qualification.  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;  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; UETTDRIS04B; 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:  UEENEEP002B Schedule 3 Strand 2  UEENEEP003B Schedule 3 Strand 1 |
| 2  UEE07 | 12 August 2009 | NQC | This review includes amendments to the UEE07 Electrotechnology Training Package as follows: Qualifications One new qualification UEE42010 Certificate IV in Electrical – Photovoltaic Systems  Units in UEE42010 Certificate IV in Electrical – Photovoltaic Systems include: New Unit 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. Modified units 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 Skills Sets Post Trade Skill Sets have been identified for:  • Installer of grid connected photovoltaic systems  • Designer of grid connected photovoltaic systems  • Designer and Installer of grid connected photovoltaic systems  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 |
| 1  UEE07 | 8 March 2008 | NQC | This review includes amendments to the UEE07 Electrotechnology Training Package as follows:  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:  unit structures  Prerequisites (and, consequently Prerequisite chains)  essential knowledge and skills clauses within the Electronics (H) and Computer Systems (D) discipline units  Amendments to Electronics 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:  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 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 compliance with the November 2006 version of the Training Package Development Handbook (Refer all mandatory text sections in both Volumes)  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:  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.  Inclusion in of Employability Skills statement tables for all Qualifications (refer Volume 1, Part 1)  Inclusion of full Prerequisite chain details for each unit (refer Table 2, Volume 1, Part 2).  Technical and ‘Plain English’ edit of entire Training Package including minor editorial amendments across Training Package to correct spelling, grammatical and typographical errors.  Amendment of all publishing-related information to UEE07, including; title pages, headers, footers, copyright statements, Training Package, qualification codes.  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’.  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”.  Removal of the definition of ‘pre-requisite’ from Volume 1, Part 1, page 63.  Revision of text within the following sections to ensure currency and accuracy:  Volume 1, Preliminary Information, Industry Coverage, Page 17.  Volume 1, Part 1, Page 4.  Volume 1, Part 1, Pages 42.  Volume 1, Part 2, Page 236.  Volume 1, Part 3, Appendix A.  Volume 1, Part 3, Guide to Assessment Methods Table.  Volume 1, Part 1, Qualifications Framework, Schedule of Electives.  Replacement of all references to ‘Skills Clusters’ with ‘Skills Sets  Replacement of all references to ‘prerequisites’ with ‘pre-requisites’  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’.  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. |

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 peoples 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) or Standards for NVR Registered Training Organisations 2012, and Training Packages endorsed by the National Skills Standards Council (NSSC).

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?

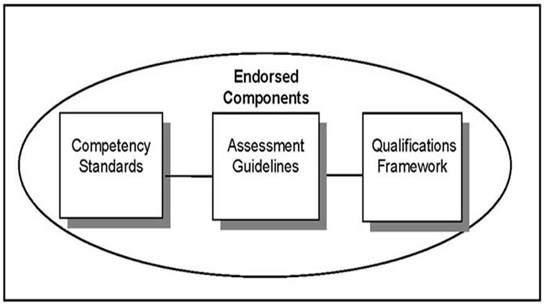
Training and assessment using Training Packages must be conducted by a Registered Training Organisation (RTO) that has the qualifications or specific units of competency on its scope of registration, or that works in partnership with another RTO, as specified in the AQTF 2010 or Standards for NVR Registered Training Organisations 2012.

Training Package Components

Training Packages are made up of mandatory components endorsed by the NSSC, 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.

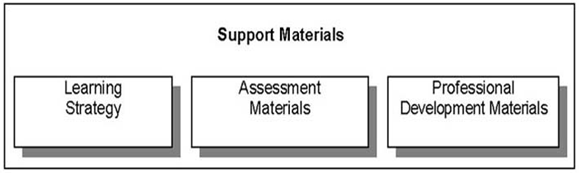
Qualifications Framework

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 - E-Oz Energy Skills Australia identifier | | | | | | | | | | | | Training Package identifier | Unit Numbers 001 to 999 | |
| 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 E-Oz Energy Skills Australia, with the support of the Australian National Training Authority (ANTA) and subsequently, the Department of Industry (DOI). E-Oz Energy Skills Australia operates under a charter from DOI 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.

## 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) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- | --- |
| UEE10111 | Certificate I in ElectroComms Skills | UEE10110 | Certificate I in ElectroComms Skills | E |

| AQF Code | Certificate II Qualifications(UEE11 – V1) | AQF Code | Training Package (UEE07 – V4) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- | --- |
| UEE20111 | Certificate II in Split Air-conditioning and Heat Pump Systems | UEE20110 | Certificate II in Split Air-conditioning and Heat Pumps Systems | E |
| Removed | Removed | UEE20207 | Certificate II in Business Equipment Servicing |  |
| UEE20411 | Certificate II in Winding and Assembly | UEE20407 | Certificate II in Winding and Assembly | E |
| UEE20511 | Certificate II in Computer Assembly and Repair | UEE20510 | Certificate II in Computer Assembly and Repair | E |
| Removed | Removed | UEE20607 | Certificate II in Custom Electronics Assembly and Setup |  |
| UEE20711 | Certificate II in Data and Voice Communications | UEE20707 | Certificate II in Data and Voice Communications | E |
| UEE20811 | Certificate II in Electrical Wholesaling | UEE20810 | Certificate II in Electrical Wholesaling | E |
| UEE20911 | Certificate II in Electronic Assembly | UEE20907 | Certificate II in Electronic Assembly | E |
| UEE21011 | Certificate II in Fire Alarms Servicing | UEE21007 | Certificate II in Fire Alarms Servicing | E |
| Removed | Removed | UEE21107 | Certificate II in Gaming Machines Servicing |  |
| UEE21211 | Certificate II in Antennae Equipment | UEE21207 | Certificate II in Antennae Equipment | E |
| UEE21311 | Certificate II in Remote Area Essential Service | UEE21310 | Certificate II in Remote Area Essential Service | E |
| UEE21411 | Certificate II in Remote Area Power Supply Maintenance | UEE21407 | Certificate II in Remote Area Power Supply Maintenance | E |
| Removed | Removed | UEE21510 | Certificate II in Renewable Energy |  |
| UEE21611 | Certificate II in Security Assembly and Setup | UEE21610 | Certificate II in Security Assembly and Setup | E |
| UEE21711 | Certificate II in Technical Support | UEE21710 | Certificate II in Technical Support | E |
| UEE21911 | Certificate II in Electronics | UEE21910 | Certificate II in Electronics | E |
| UEE22011 | Certificate II in Electrotechnology (Career Start) | UEE22010 | Certificate II in Electrotechnology (Career Start) | E |
| UEE22111 | Certificate II in Sustainable Energy (Career Start) | UEE22107 | Certificate II in Sustainable Energy (Career Start) | E |

| AQF Code | Certificate III Qualifications(UEE11 – V1) | AQF Code | Training Package (UEE07 – V4) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- | --- |
| UEE30111 | Certificate III in Business Equipment | UEE30107 | Certificate III in Business Equipment | E |
| UEE30211 | Certificate III in Computer Systems Equipment | UEE30210 | Certificate III in Computer Systems Equipment | E |
| UEE30311 | Certificate III in Custom Electronics Installations | UEE30310 | Certificate III in Custom Electronics Installations | E |
| UEE30411 | Certificate III in Data and Voice Communications | UEE30407 | Certificate III in Data and Voice Communications | E |
| UEE30611 | Certificate III in Electrical Machine Repair | UEE30607 | Certificate III in Electrical Machine Repair | E |
| UEE30711 | Certificate III in Switchgear and Control Gear | UEE30707 | Certificate III in Switchgear and Control Gear | E |
| UEE30811 | Certificate III in Electrotechnology Electrician | UEE30807 | Certificate III in Electrotechnology Electrician | E |
| UEE30911 | Certificate III in Electronics and Communications | UEE30910 | Certificate III in Electronics and Communications | E |
| UEE31011 | Certificate III in Fire Protection Control | UEE31007 | Certificate III in Fire Protection Control | E |
| UEE31111 | Certificate III in Gaming Electronics | UEE31107 | Certificate III in Gaming Electronics | E |
| UEE31211 | Certificate III in Instrumentation and Control | UEE31210 | Certificate III in Instrumentation and Control | E |
| UEE31411 | Certificate III in Security Equipment | UEE31410 | Certificate III in Security Equipment | E |
| UEE31511 | Certificate III in Rail – Communications and Networks | UEE31507 | Certificate III in Rail – Communications and Networks | E |
| 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-protected equipment overhaul |  |
| UEE32011 | Certificate III in Renewable Energy - ELV | UEE32010 | Certificate III in Renewable Energy – ELV | E |
| UEE32111 | Certificate III in Appliance Service | UEE32110 | Certificate III in Appliance Service | E |
| UEE32211 | Certificate III in Air-conditioning and Refrigeration | UEE32210 | Certificate III in Air-conditioning and Refrigeration | E |
| UEE33011 | Certificate III in Electrical Fitting | New Qual | New Qualification |  |

| AQF Code | Certificate IV Qualifications(UEE11 –V1) | AQF Code | Training Package (UEE07 – V4) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- | --- |
| UEE40111 | Certificate IV in Computer Systems | UEE40110 | Certificate IV in Computer Systems | E |
| UEE40211 | Certificate IV in Electrical – Data and Voice Communications | UEE40210 | Certificate IV in Electrical – Data and Voice Communications | E |
| UEE40311 | Certificate IV in Electrical Installation Inspection and Audits | UEE40310 | Certificate IV in Electrical Installation Inspection and Audits | E |
| UEE40411 | Certificate IV in Electrical – Instrumentation | UEE40410 | Certificate IV in Electrical – Instrumentation | E |
| UEE40511 | Certificate IV in Electrical – Air-conditioning Split Systems | UEE40510 | Certificate IV in Electrical – Air-conditioning Systems | E |
| UEE40611 | Certificate IV in Electrotechnology – Systems Electrician | UEE40610 | Certificate IV in Electrotechnology – Systems Electrician | E |
| UEE40711 | Certificate IV in Electronics and Communications | UEE40710 | Certificate IV in Electronics and Communications | E |
| UEE40811 | Certificate IV in Electrical – Fire Protection Control Systems | UEE40810 | Certificate IV in Electrical – Fire Protection Control Systems | E |
| UEE40911 | Certificate IV in Industrial Electronics and Control | UEE40910 | Certificate IV in Industrial Electronics and Control | E |
| UEE41011 | Certificate IV in Energy Management and Control | UEE41010 | Certificate IV in Energy Management and Control | E |
| UEE41111 | Certificate IV in Electrical – Lift Systems | UEE41110 | Certificate IV in Electrical – Lift Systems | E |
| UEE41211 | Certificate IV in Electrical – Rail Signalling | UEE41210 | Certificate IV in Electrical – Rail Signalling | E |
| UEE41511 | Certificate IV in Video and Audio Systems | UEE41510 | Certificate IV in Video and Audio Systems | E |
| UEE41611 | Certificate IV in Renewable Energy | UEE41610 | Certificate IV in Renewable Energy | E |
| UEE41711 | Certificate IV in Rail – Communications and Network Systems | UEE41710 | Certificate IV in Rail – Communications and Network Systems | E |
| UEE41911 | Certificate IV in Electrical – Renewable Energy | UEE41910 | Certificate IV in Electrical – Renewable Energy | E |
| UEE42011 | Certificate IV in Electrical – Photovoltaic Systems | UEE42010 | Certificate IV in Electrical – Photovoltaic Systems | E |
| UEE42111 | Certificate IV in Electrotechnology – Electrical Contracting | UEE42110 | Certificate IV in Electrotechnology – Electrical Contracting | E |
| UEE42211 | Certificate IV in Instrumentation and Control | UEE42210 | Certificate IV in Instrumentation and Control | E |
| Removed | Removed | UEE42410 | Certificate IV in Hazardous areas – Industrial control |  |
| UEE42611 | Certificate IV in Hazardous areas – Electrical | UEE42610 | Certificate IV in Hazardous areas – Electrical | E |
| UEE42711 | Certificate IV in Air-conditioning and Refrigeration Servicing | UEE42710 | Certificate IV in Air-conditioning and Refrigeration Servicing | E |
| UEE42811 | Certificate IV in Air-conditioning Systems Energy Management and Control | UEE42810 | Certificate IV in Air-conditioning Systems Energy Management and Control | E |
| UEE42911 | Certificate IV in Refrigeration and Air-conditioning Systems | UEE42910 | Certificate IV in Refrigeration and Air-conditioning Systems | E |
| 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) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- | --- |
| UEE50111 | Diploma of Computer Systems Engineering | UEE50110 | Diploma of Computer Systems Engineering | E |
| UEE50211 | Diploma of Electrical and Instrumentation | UEE50210 | Diploma of Electrical and Instrumentation | E |
| UEE50311 | Diploma of Electrical and Refrigeration and Air-conditioning | UEE50310 | Diploma of Electrical and Refrigeration and Air-conditioning | E |
| UEE50411 | Diploma of Electrical Engineering | UEE50410 | Diploma of Electrical Engineering | E |
| UEE50511 | Diploma of Electronics and Communications Engineering | UEE50510 | Diploma of Electronics and Communications Engineering | E |
| UEE50711 | Diploma of Renewable Energy Engineering | UEE50710 | Diploma of Renewable Energy Engineering | E |
| UEE50811 | Diploma of Research and Development | UEE50810 | Diploma of Research and Development | E |
| UEE50911 | Diploma of Industrial Electronics and Control Engineering | UEE50910 | Diploma of Industrial Electronics and Control Engineering | E |
| UEE51011 | Diploma of Instrumentation and Control Engineering | UEE51010 | Diploma of Instrumentation and Control Engineering | E |
| UEE51111 | Diploma of Engineering Technology - Refrigeration and Air-conditioning | UEE51110 | Diploma of Engineering Technology - Refrigeration and Air-conditioning | E |
| UEE51211 | Diploma of Air-conditioning and Refrigeration Engineering | UEE51210 | Diploma of Air-conditioning and Refrigeration Engineering | E |
| UEE53011 | Diploma of Electrical Systems Engineering | New Qual | New Qualification |  |

| AQF Code | Advanced Diploma Qualifications (UEE11 – V1) | AQF Code | Training Package (UEE07 – V4) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- | --- |
| UEE60211 | Advanced Diploma of Electronics and Communications Engineering | UEE60210 | Advanced Diploma of Electronics and Communications Engineering | E |
| UEE60411 | Advanced Diploma of Computer Systems Engineering | UEE60410 | Advanced Diploma of Computer Systems Engineering | E |
| UEE60611 | Advanced Diploma of Industrial Electronics and Control Engineering | UEE60610 | Advanced Diploma of Industrial Electronics and Control Engineering | E |
| UEE60911 | Advanced Diploma of Renewable Energy Engineering | UEE60910 | Advanced Diploma of Renewable Energy Engineering | E |
| UEE61111 | Advanced Diploma of Automated Systems Maintenance Engineering | UEE61110 | Advanced Diploma of Automated Systems Maintenance Engineering | E |
| UEE61211 | Advanced Diploma of Engineering Explosion protection | UEE61210 | Advanced Diploma of Engineering Explosion protection | E |
| Removed | Removed | UEE61410 | Advanced Diploma of Engineering – Explosion protection - Industrial control |  |
| UEE61511 | Advanced Diploma of Instrumentation and Control Engineering | UEE61510 | Advanced Diploma of Instrumentation and Control Engineering | E |
| UEE61711 | Advanced Diploma of Engineering Technology - Electronic | UEE61710 | Advanced Diploma of Engineering Technology - Electronic | E |
| UEE61811 | Advanced Diploma of Engineering Technology - Computer Systems | UEE61810 | Advanced Diploma of Engineering Technology - Computer Systems | E |
| UEE62011 | Advanced Diploma of Engineering Technology - Renewable Energy | UEE62010 | Advanced Diploma of Engineering Technology - Renewable Energy | E |
| UEE62111 | Advanced Diploma of Engineering Technology – Electrical | UEE62110 | Advanced Diploma of Engineering Technology – Electrical | E |
| UEE62211 | Advanced Diploma of Electrical – Engineering | UEE62210 | Advanced Diploma of Electrical – Engineering | E |
| UEE62311 | Advanced Diploma of Electrical Engineering – Coal Mining | UEE62310 | Advanced Diploma of Electrical Engineering – Coal Mining | E |
| UEE62411 | Advanced Diploma of Engineering Technology – Air-conditioning and Refrigeration | UEE62410 | Advanced Diploma of Engineering Technology – Air-conditioning and Refrigeration | E |
| UEE62511 | Advanced Diploma of Air-conditioning and Refrigeration Engineering | UEE62510 | Advanced Diploma of Air-conditioning and Refrigeration Engineering | E |
| 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) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE20111 | Certificate II in Split Air-conditioning and Heat Pumps Systems | Certificate II in Air-conditioning Split Systems | E except for the addition of heat pump systems |
|  | Removed | Certificate II in Appliance Servicing – Refrigerants |  |

| AQF Code | Certificate III Qualifications (UEE07 – V4) | Training Package (UEE07 – V3.1) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE32111 | Certificate III in Appliance Service | Certificate III in Appliance Servicing | E |
| UEE32211 | Certificate III in Air-conditioning and Refrigeration | Certificate III in Refrigeration and Air-conditioning | E |

| AQF Code | Certificate IV Qualifications (UEE07 –V4) | Training Package (UEE07 – V3.1) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE42711 | Certificate IV in Air-conditioning and Refrigeration Servicing | Certificate IV in Refrigeration and Air-conditioning Servicing | E |
| UEE42811 | Certificate IV in Air-conditioning Systems Energy Management and Control | Certificate IV in Air-conditioning Energy Management and Control | E |
| UEE42911 | Certificate IV in Refrigeration and Air-conditioning Systems | Certificate IV in Air-conditioning and Refrigeration Systems | E |

| AQF Code | Diploma Qualifications (UEE07 – V4) | Training Package (UEE07 – V3.1) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| 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 | E |

| AQF Code | Advanced Diploma Qualifications (UEE07 – V4) | Training Package (UEE07 – V3.1) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE62211 | Advanced Diploma of Electrical - Engineering | Advanced Diploma of Electrical Engineering | N |
| 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 | E |
| UEE62511 | Advanced Diploma of Air-conditioning and Refrigeration Engineering | Advanced Diploma of Refrigeration and Air-conditioning Engineering | N |

## 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) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE10110 | Certificate I in ElectroComms Skills | UEE10110 Certificate I in ElectroComms Skills | E |

| AQF Code | Certificate II Qualifications (UEE07 – V3.1) | Training Package (UEE07 – V3.0) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE20510 | Certificate II in Computer Assembly and Repair | UEE20507 Certificate II in Computer Assembly and Repair | E |
| UEE21310 | Certificate II in Remote Area Essential Service | UEE21310 Certificate II in Remote Area Essential Service | E |
| UEE21610 | Certificate II in Security Assembly and Setup | UEE21610 Certificate II in Security Assembly and Setup | E |
| UEE21710 | Certificate II in Technical Support | UEE21710 Certificate II in Technical Support | E |
| UEE21910 | Certificate II in Electronics | UEE21907 Certificate II in Electronics | E |
| UEE22010 | Certificate II in Electrotechnology (Career Start) | UEE22010 Certificate II in Electrotechnology (Career Start) | E |

| AQF Code | Certificate III Qualifications (UEE07 – V3.1) | Training Package (UEE07 – V3.0) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE30210 | Certificate III in Computer Systems Equipment | UEE30207 Certificate III in Computer Systems Equipment | E |
| UEE30310 | Certificate III in Custom Electronics Installations | UEE30310 Certificate III in Custom Electronics Installations | E |
| UEE30910 | Certificate III in Electronics and Communications | UEE30910 Certificate III in Electronics and Communications | E |

| AQF Code | Certificate IV Qualifications (UEE07 –V3.1) | Training Package (UEE07 – V3.0) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE40110 | Certificate IV in Computer Systems | UEE40110 Certificate IV in Computer Systems | E |
| UEE40710 | Certificate IV in Electronics and Communications | UEE40710 Certificate IV in Electronics and Communications | E |
| UEE41510 | Certificate IV in Video and Audio Systems | UEE41507 Certificate IV in Video and Audio Systems | E |
| UEE41610 | Certificate IV in Renewable Energy | UEE41610 Certificate IV in Renewable Energy | E |

| AQF Code | Diploma Qualifications (UEE07 – V3.1) | Training Package (UEE07 – V3.0) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE50110 | Diploma of Computer Systems Engineering | UEE50110 Diploma of Computer Systems Engineering | E |
| UEE50510 | Diploma of Electronics and Communications Engineering | UEE50510 Diploma of Electronics and Communications Engineering | E |

| AQF Code | Advanced Diploma Qualifications (UEE07 – V3.1) | Training Package (UEE07 – V3.0) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE60210 | Advanced Diploma of Electronics and Communications Engineering | UEE60210 Advanced Diploma of Electronics and Communications Engineering | E |
| UEE60410 | Advanced Diploma of Computer Systems Engineering | UEE60407 Advanced Diploma of Computer Systems Engineering | E |
| UEE62010 | Advanced Diploma of Engineering Technology - Renewable Energy | UEE61007 Advanced Diploma of Renewable Energy – Technology | E |
| UEE62110 | Advanced Diploma of Engineering Technology - Electrical | UEE61307 Advanced Diploma of Electrical – Technology | E |

## 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) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE10110 | Certificate I in ElectroComms Skills | UEE10107 Certificate I in ElectroComms Skills | E |

| AQF Code | Certificate II Qualifications (UEE07 – V3) | Training Package (UEE07 – V2) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE20810 | Certificate II in Electrical Wholesaling | New Qualification |  |
| UEE21310 | Certificate II in Remote Area Essential Service | UEE21307 Certificate II in Remote Area Essential Service | N |
| UEE21510 | Certificate II in Renewable Energy | UEE21507 Certificate II in Renewable Energy | E |
| UEE21610 | Certificate II in Security Assembly and Setup | UEE21607 Certificate II in Security Assembly and Setup | E |
| UEE21810 | Certificate II in Appliance Servicing – Refrigerants | UEE21807 Certificate II in Appliance Servicing – Refrigerants | E |
| UEE22010 | Certificate II in Electrotechnology (Career Start) | UEE22007 Certificate II in Electrotechnology (Career Start) | E |

| AQF Code | Certificate III Qualifications (UEE07 – V3) | Training Package (UEE07 – V2) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE30310 | Certificate III in Custom Electronics Installations | UEE30307 Certificate III in Custom Electronics Installations | E |
| UEE30510 | Certificate III in Appliance Servicing | UEE30507 Certificate III in Appliance Servicing | E |
| UEE30910 | Certificate III in Electronics and Communications | UEE30907 Certificate III in Electronics and Communications | E |
| UEE31210 | Certificate III in Instrumentation and Control | UEE31207 Certificate III in Instrumentation and Control | N |
| UEE31410 | Certificate III in Security Equipment | UEE31407 Certificate III in Security Equipment | E |
| UEE31710 | Certificate III in Hazardous areas – Electrician | UEE31707 Certificate III in Hazardous areas – Electrician | E |
| UEE31810 | Certificate III in Hazardous areas – Instrumentation | UEE31807 Certificate III in Hazardous areas – Instrumentation | N |
| UEE31910 | Certificate III in Explosion-protected equipment overhaul | UEE31907 Certificate III in Explosion-protected equipment overhaul | E |
| UEE32010 | Certificate III in Renewable Energy - ELV | UEE32007 Certificate III in Renewable Energy – ELV | E |

| AQF Code | Certificate IV Qualifications (UEE07 –V3) | Training Package (UEE07 – V2) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE40110 | Certificate IV in Computer Systems | UEE40107 Certificate IV in Computer Systems | E |
| UEE40210 | Certificate IV in Electrical – Data and Voice Communications | UEE40207 Certificate IV in Electrical – Data and Voice Communications | E |
| UEE40310 | Certificate IV in Electrical Installation Inspection and Audits | UEE40307 Certificate IV in Electrical Installation Inspection and Audits | E |
| UEE40410 | Certificate IV in Electrical – Instrumentation | UEE40407 Certificate IV in Electrical – Instrumentation | E |
| UEE40510 | Certificate IV in Electrical – Air-conditioning Systems | UEE40507 Certificate IV in Electrical – Air-conditioning Systems | E |
| UEE40610 | Certificate IV in Electrotechnology – Systems Electrician | UEE40607 Certificate IV in Electrotechnology – Systems Electrician | E |
| UEE40710 | Certificate IV in Electronics and Communications | UEE40707 Certificate IV in Electronics and Communications | E |
| UEE40810 | Certificate IV in Electrical – Fire Protection Control Systems | UEE40807 Certificate IV in Electrical – Fire Protection Control Systems | E |
| UEE40910 | Certificate IV in Industrial Electronics and Control | UEE40907 Certificate IV in Industrial Electronics and Control – Option 1 only | E |
| UEE41010 | Certificate IV in Energy Management and Control | UEE41007 Certificate IV in Energy Management and Control – Option 2 only | E |
| UEE41110 | Certificate IV in Electrical – Lift Systems | UEE41107 Certificate IV in Electrical – Lift Systems | E |
| UEE41210 | Certificate IV in Electrical – Rail Signalling | UEE41207 Certificate IV in Electrical – Rail Signalling | E |
| UEE41310 | Certificate IV in Refrigeration and Air-conditioning Servicing | UEE41307 Certificate IV in Refrigeration and Air-conditioning Servicing | E |
| UEE41510 | Certificate IV in Video and Audio Systems | UEE41507 Certificate IV in Video and Audio Systems | E |
| UEE41610 | Certificate IV in Renewable Energy | UEE41607 Certificate IV in Renewable Energy | E |
| UEE41710 | Certificate IV in Rail – Communications and Network Systems | UEE41707 Certificate IV in Rail – Communications and Network Systems | E |
| UEE41910 | Certificate IV in Electrical – Renewable Energy | UEE41907 Certificate IV in Electrical – Renewable Energy | E |
| UEE42010 | Certificate IV in Electrical – Photovoltaic Systems | UEE42009 Certificate IV in Electrical – Photovoltaic Systems | E |
| UEE42110 | Certificate IV in Electrotechnology – Electrical Contracting | New Qualification |  |
| UEE42210 | Certificate IV in Instrumentation and Control | UEE40907 Certificate IV in Industrial Electronics and Control – Option 2 only | N |
| UEE42310 | Certificate IV in Air-conditioning Energy Management and Control | UEE41007 Certificate IV in Energy Management and Control – Option 1 only | E |
| UEE42410 | Certificate IV in Hazardous areas – Industrial control | UEE41807 Certificate IV in Hazardous areas  – Option 2 only | N |
| UEE42510 | Certificate IV in Air-conditioning and Refrigeration Systems | UEE41407 Certificate IV in Refrigeration and Air-conditioning Systems | E |
| UEE42610 | Certificate IV in Hazardous areas - Electrical | UEE41807 Certificate IV in Hazardous areas  – Option 1 only | E |

| AQF Code | Diploma Qualifications (UEE07 – V3) | Training Package (UEE07 – V2) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE50110 | Diploma of Computer Systems Engineering | UEE50107 Diploma of Computer Systems Engineering | E |
| UEE50210 | Diploma of Electrical and Instrumentation | UEE50207 Diploma of Electrical and Instrumentation | E |
| UEE50310 | Diploma of Electrical and Refrigeration and Air-conditioning | UEE50307 Diploma of Electrical and Refrigeration and Air-conditioning | E |
| UEE50410 | Diploma of Electrical Engineering | UEE50407 Diploma in Electrical Engineering | E |
| UEE50510 | Diploma of Electronics and Communications Engineering | UEE50507 Diploma of Electronics and Communications Engineering | E |
| UEE50610 | Diploma of Refrigeration and Air-conditioning Engineering | UEE50607 Diploma of Refrigeration and Air-conditioning Engineering | E |
| UEE50710 | Diploma of Renewable Energy Engineering | UEE50707 Diploma of Renewable Energy Engineering | E |
| UEE50810 | Diploma of Research and Development | UEE50807 Diploma of Research and Development | E |
| UEE50910 | Diploma of Industrial Electronics and Control Engineering | UEE50907 Diploma of Industrial Electronics and Control Engineering – Option 1 only | E |
| UEE51010 | Diploma in Instrumentation and Control Engineering | UEE50907 Diploma of Industrial Electronics and Control Engineering – Option 2 only | N |

| AQF Code | Advanced Diploma Qualifications (UEE07 – V3) | Training Package (UEE07 – V2) | E = Equivalent  N = Not Equivalent |
| --- | --- | --- | --- |
| UEE60110 | Advanced Diploma of Electrical Engineering | UEE60107 Advanced Diploma in Electrical Engineering | E |
| UEE60210 | Advanced Diploma of Electronics and Communications Engineering | UEE60207 Advanced Diploma of Electronics and Communications Engineering | E |
| UEE60410 | Advanced Diploma of Computer Systems Engineering | UEE60407 Advanced Diploma of Computer Systems Engineering | E |
| UEE60610 | Advanced Diploma of Industrial Electronics and Control Engineering | UEE60607 Advanced Diploma of Industrial Electronics and Control Engineering  – Option 1 only | E |
| UEE60710 | Advanced Diploma of Refrigeration and Air-conditioning Engineering | UEE60707 Advanced Diploma of Refrigeration and Air-conditioning Engineering | E |
| UEE60910 | Advanced Diploma of Renewable Energy Engineering | UEE60907 Advanced Diploma of Renewable Energy Engineering | E |
| UEE61110 | Advanced Diploma of Automated Systems Maintenance Engineering | UEE61107 Advanced Diploma of Automated Systems Maintenance Engineering | E |
| UEE61210 | Advanced Diploma of Engineering – Explosion protection | UEE61207 Advanced Diploma of Engineering – Explosion protection | E |
| UEE61410 | Advanced Diploma of Engineering Explosion protection – Industrial control | UEE61207 Advanced Diploma of Engineering – Explosion protection  – Option 2 only | N |
| UEE61510 | Advanced Diploma of Instrumentation and Control Engineering | UEE60607 Advanced Diploma of Industrial Electronics and Control Engineering  – Option 2 only | N |
| UEE61710 | Advanced Diploma of Engineering Technology - Electronic | UEE60307 Advanced Diploma of Electronic –Technology | E |
| UEE61810 | Advanced Diploma of Engineering Technology - Computer Systems | UEE60507 Advanced Diploma of Computer Systems – Technology | E |
| UEE61910 | Advanced Diploma of Engineering Technology - Refrigeration and Air-conditioning | New Qualification |  |
| UEE62010 | Advanced Diploma of Engineering Technology - Renewable Energy | UEE61007 Advanced Diploma of Renewable Energy – Technology | E |
| UEE62110 | Advanced Diploma of Engineering Technology - Electrical | UEE61307 Advanced Diploma of Electrical – Technology | E |

## 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 | Equivalent – full, part, or no |
| --- | --- | --- | --- |
|  | All Existing Qualifications in UEE07 Version 1 | All existing qualifications in UEE07 version 1 remain unchanged | Refer to table mapping UEE07 Version 1 qualifications to UEE06 Version 1 for equivalences |
| 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. | New |

## 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) | Equivalent – full, part, or no |
| --- | --- | --- | --- |
| UEE10107 | Certificate I in ElectroComms Skills | UEE10106 Certificate I in ElectroComms Skills | Full |

| AQF Code | Certificate II Qualifications (UEE07) | Former Training Package (UEE06) | Equivalent – full, part, or no |
| --- | --- | --- | --- |
| UEE20107 | Certificate II in Air-conditioning Split Systems | UEE20106 Certificate II in Air-conditioning Split Systems | Full |
| UEE20207 | Certificate II in Business Equipment Servicing | UEE20206 Certificate II in Business Equipment Servicing | Full |
| 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 | Full |
| UEE20507 | Certificate II in Computer Assembly and Repair | UEE20506 Certificate II in Computer Assembly and Repair | Part – All Pre-requisites removed from UEENEED002B |
| UEE20607 | Certificate II in Custom Electronics Assembly and Setup | UEE20606 Certificate II in Custom Electronics Assembly and Setup | Full |
| UEE20707 | Certificate II in Data and Voice Communications | UEE20706 Certificate II in Data and Voice Communications | Full |
| Reserved | Certificate II in Electrical Wholesaling |  |  |
| UEE20907 | Certificate II in Electronic Assembly | UEE20906 Certificate II in Electronic Assembly | Part – Removal of Pre-requisites from UEENEEH002B |
| UEE21007 | Certificate II in Fire Alarms Servicing | UEE21006 Certificate II in Fire Alarms Servicing | Full |
| UEE21107 | Certificate II in Gaming Machines Servicing | UEE21106 Certificate II in Gaming Machines Servicing | Full |
| UEE21207 | Certificate II in Antennae Equipment | UEE21206 Certificate II in Antennae Equipment | Full |
| UEE21307 | Certificate II in Remote Area Essential Service | UEE21306 Certificate II in Remote Area Essential Service | Full |
| UEE21407 | Certificate II in Remote Area Power Supply Maintenance | UEE21406 Certificate II in Remote Area Power Supply Maintenance | Full |
| UEE21507 | Certificate II in Renewable Energy | UEE21506 Certificate II in Renewable Energy | Part – Removal of UEENEEK025B from Core. |
| UEE21607 | Certificate II in Security Assembly and Setup | UEE21606 Certificate II in Security Assembly and Setup | Full |
| UEE21707 | Certificate II in Technical Support | UEE21706 Certificate II in Technical Support | Part – All Pre-requisites removed from UEENEEE022B |
| UEE21807 | Certificate II in Appliance Servicing – Refrigerants | UEE21806 Certificate II in Appliance Servicing – Refrigerants | Full |
| UEE21907 | Certificate II in Electronics | UEE21906 Certificate II in Electronics | Part – Removal of Pre-requisites from UEENEEH002B |
| UEE22007 | Certificate II in Electrotechnology (Career Start) | UEE22000 Certificate II in Electrotechnology (Career Start) | Full |
| UEE22107 | Certificate II in Sustainable Energy (Career Start) | UEE22106 Certificate II in Sustainable Energy (Career Start) | Full |

| AQF Code | Certificate III Qualifications (UEE07) | Former Training Package (UEE06) | Equivalent – full, part, or no |
| --- | --- | --- | --- |
| UEE30107 | Certificate III in Business Equipment | UEE30106 Certificate III in Business Equipment | Part – Removal of Pre-requisites from UEENEEH002B and UEENEEH011B and  UEENEEH012B and UEENEEH013B and  UEENEEH039B and  Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE30207 | Certificate III in Computer Systems Equipment | UEE30206 Certificate III in Computer Systems Equipment | Part – All Pre-requisites removed from UEENEED002B |
| UEE30307 | Certificate III in Custom Electronics Installations | UEE30306 Certificate III in Custom Electronics Installations | Part - Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE30407 | Certificate III in Data and Voice Communications | UEE30406 Certificate III in Data and Voice Communications | Part - Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE30507 | Certificate III in Appliance Servicing | UEE30506 Certificate III in Appliance Servicing | Part – Removal of Pre-requisite from UEENEEJ054B and amendment of EKAS alignments in UEENEEP001B |
| UEE30607 | Certificate III in Electrical Machine Repair | UEE30606 Certificate III in Electrical Machine Repair | Part – All Pre-requisites removed from UEENEEG001B and UEENEEG002B and amendment of EKAS alignments in UEENEEP001B |
| UEE30707 | Certificate III in Switchgear and Control Gear | UEE30706 Certificate III in Switchgear and Control Gear | Part – All Pre-requisites removed from UEENEEG001B and UEENEEG002B and amendment of EKAS alignments in UEENEEP001B |
| UEE30807 | Certificate III in Electrotechnology Electrician | UEE30806 Certificate III in Electrotechnology Electrician | Part – All Pre-requisites removed from UEENEEG001B and UEENEEG002B |
| UEE30907 | Certificate III in Electronics and Communications | UEE30906 Certificate III in Electronics and Communications | Part – Removal of Pre-requisites from UEENEEH002B and UEENEEH011B and  UEENEEH012B and UEENEEH013B and UEENEEH039B and  Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE31007 | Certificate III in Fire Protection Control | UEE31006 Certificate III in Fire Protection Control | Part - Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE31107 | Certificate III in Gaming Electronics | UEE31106 Certificate III in Gaming Electronics | Part – Removal of Pre-requisites from UEENEEH002B and UEENEEH011B and  UEENEEH012B and UEENEEH013B and UEENEEH018B and UEENEEH039B and  Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE31207 | Certificate III in Instrumentation and Control | UEE31206 Certificate III in Instrumentation and Control | Part - Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE31307 | Certificate III in Refrigeration and Air-conditioning | UEE31306 Certificate III in Refrigeration and Air-conditioning | Part – All Pre-requisite units removed from unit UEENEEC025B and amendment of EKAS alignments in UEENEEP001B |
| UEE31407 | Certificate III in Security Equipment | UEE31406 Certificate III in Security Equipment | Part - Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE31507 | Certificate III in Rail – Communications and Networks | UEE31506 Certificate III in Rail – Communications and Networks | Part – Removal of Pre-requisites from UEENEEH002B and UEENEEH011B and  UEENEEH012B and UEENEEH013B and UEENEEH039B and  Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| 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 | Part – All Pre-requisites removed from UEENEEG001B and UEENEEG002B and amendment of Pre-requisite statement in UEENEEM001B |
| UEE31807 | Certificate III in Hazardous areas – Instrumentation | UEE31806 Certificate III in Hazardous areas – Instrumentation | Part - Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement and amendment of Pre-requisite statement in UEENEEM001B |
| UEE31907 | Certificate III in Explosion-protected equipment overhaul | UEE31906 Certificate III in Explosion-protected equipment overhaul | Part – All Pre-requisites removed from UEENEEG001B and UEENEEG002B and amendment of Pre-requisite statement in UEENEEM007B |
| UEE32007 | Certificate III in Renewable Energy - ELV | New | No |

| AQF Code | Certificate IV Qualifications (UEE07) | Former Training Package (UEE06) | Equivalent – full, part, or no |
| --- | --- | --- | --- |
| UEE40107 | Certificate IV in Computer Systems | UEE40106 Certificate IV in Computer Systems | Part – All Pre-requisites removed from UEENEED002B |
| UEE40207 | Certificate IV in Electrical – Data and Voice Communications | UEE40206 Certificate IV in Electrical – Data and Voice Communications | Full |
| UEE40307 | Certificate IV in Electrical Installation Inspection and Audits | UEE40306 Certificate IV in Electrical Installation Inspection and Audits | Full |
| UEE40407 | Certificate IV in Electrical – Instrumentation | UEE40406 Certificate IV in Electrical – Instrumentation | Full |
| UEE40507 | Certificate IV in Electrical – Air-conditioning Systems | UEE40506 Certificate IV in Electrical – Air-conditioning Systems | Full |
| UEE40607 | Certificate IV in Electrotechnology – Systems Electrician | UEE40606 Certificate IV in Electrotechnology – Systems Electrician | Full |
| UEE40707 | Certificate IV in Electronics and Communications | UEE40706 Certificate IV in Electronics and Communications | Part – Removal of Pre-requisites from UEENEEH002B and UEENEEH011B and  UEENEEH012B and UEENEEH013B and UEENEEH039B and  Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE40807 | Certificate IV in Electrical – Fire Protection Control Systems | UEE40806 Certificate IV in Electrical – Fire Protection Control Systems | Full |
| UEE40907 | Certificate IV in Industrial Electronics and Control | UEE40906 Certificate IV in Industrial Electronics and Control | Part – Removal of Pre-requisites from UEENEEH043B and UEENEEH044B |
| UEE41007 | Certificate IV in Energy Management and Control | UEE41006 Certificate IV in Energy Management and Control | Full |
| UEE41107 | Certificate IV in Electrical – Lift Systems | UEE41106 Certificate IV in Electrical – Lift Systems | Part – Removal of Pre-requisites from UEENEEH043B and UEENEEH044B |
| UEE41207 | Certificate IV in Electrical – Rail Signalling | UEE41206 Certificate IV in Electrical – Rail Signalling | Full |
| UEE41307 | Certificate IV in Refrigeration and Air-conditioning Servicing | UEE41306 Certificate IV in Refrigeration and Air-conditioning Servicing | Full |
| UEE41407 | Certificate IV in Refrigeration and Air-conditioning Systems | UEE41406 Certificate IV in Refrigeration and Air-conditioning Systems | Full |
| UEE41507 | Certificate IV in Video and Audio Systems | UEE415076 Certificate IV in Video and Audio Systems | Part – Removal of Pre-requisites from UEENEEH002B and UEENEEH011B and  UEENEEH012B and UEENEEH013B and UEENEEH039B and  Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE41607 | Certificate IV in Renewable Energy | UEE41606 Certificate IV in Renewable Energy | Part – All Pre-requisites removed from UEENEEG002B |
| UEE41707 | Certificate IV in Rail – Communications and Network Systems | UEE41706 Certificate IV in Rail – Communications and Network Systems | Part – Removal of Pre-requisites from UEENEEH002B and UEENEEH011B and  UEENEEH012B and UEENEEH013B and UEENEEH039B and  Inclusion of ‘or UEENEEH069B’ in UEENEEH014B Pre-requisite statement |
| UEE41807 | Certificate IV in Hazardous areas | UEE41806 Certificate IV in Hazardous areas | Part – amendment of Pre-requisite statement in UEENEEEM004A |
| UEE41907 | Certificate IV in Electrical – Renewable Energy | New | No |

| AQF Code | Diploma Qualifications (UEE07) | Former Training Package (UEE06) | Equivalent – full, part, or no |
| --- | --- | --- | --- |
| UEE50107 | Diploma of Computer Systems Engineering | UEE50106 Diploma in Computer Systems Engineering | Full |
| UEE50207 | Diploma of Electrical and Instrumentation | UEE50206 Diploma of Electrical and Instrumentation | Full |
| UEE50307 | Diploma of Electrical and Refrigeration and Air-conditioning | UEE50306 Diploma of Electrical and Refrigeration and Air-conditioning | Full |
| UEE50407 | Diploma of Electrical Engineering | UEE50406 Diploma in Electrical Engineering | Full |
| UEE50507 | Diploma of Electronics and Communications Engineering | UEE50506 Diploma of Electronics and Communications Engineering | Full |
| UEE50607 | Diploma of Refrigeration and Air-conditioning Engineering | UEE50606 Diploma of Refrigeration and Air-conditioning Engineering | Full |
| UEE50707 | Diploma of Renewable Energy Engineering | UEE50706 Diploma of Renewable Energy Engineering | Full |
| UEE50807 | Diploma of Research and Development | UEE50806 Diploma of Research and Development | Full |
| UEE50907 | Diploma of Industrial Electronics and Control Engineering | UEE50906 Diploma of Industrial Electronics and Control Engineering | Part – Removal of Pre-requisites from UEENEEH043B and UEENEEH044B |

| AQF Code | Advanced Diploma Qualifications (UEE07) | Former Training Package (UEE06) | Equivalent – full, part, or no |
| --- | --- | --- | --- |
| UEE60107 | Advanced Diploma of Electrical Engineering | Advanced Diploma in Electrical Engineering | Full |
| UEE60207 | Advanced Diploma of Electronics and Communications Engineering | UEE60206 Advanced Diploma of Electronics and Communications Engineering | Full |
| UEE60307 | Advanced Diploma of Electronic – Technology | UEE60306 Advanced Diploma of Electronic – Technology | Part – Pre-requisites removed from UEENEED002B and UEENEEE025B, and UEENEEH011B and  UEENEEH012B and UEENEEH039B |
| UEE60407 | Advanced Diploma of Computer Systems Engineering | UEE60406 Advanced Diploma of Computer Systems Engineering | Part – All Pre-requisites removed from UEENEED052B |
| UEE60507 | Advanced Diploma of Computer Systems – Technology | UEE60506 Advanced Diploma of Computer Systems – Technology | Part –Pre-requisites removed from UEENEED002B and  UEENEEH012B |
| UEE60607 | Advanced Diploma of Industrial Electronics and Control Engineering | UEE60606 Advanced Diploma of Industrial Electronics and Control Engineering | Part – All Pre-requisites removed from UEENEEE025B |
| UEE60707 | Advanced Diploma of Refrigeration and Air-conditioning Engineering | UEE60706 Advanced Diploma of Refrigeration and Air-conditioning Engineering | Full |
| UEE60807 | Advanced Diploma of Refrigeration and Air-conditioning – Technology | UEE60806 Advanced Diploma of Refrigeration and Air-conditioning – Technology | Part – All Pre-requisites removed from UEENEEE025B |
| UEE60907 | Advanced Diploma of Renewable Energy Engineering | UEE60906 Advanced Diploma of Renewable Energy Engineering | Full |
| UEE61007 | Advanced Diploma of Renewable Energy – Technology | UEE61006 Advanced Diploma of Renewable Energy – Technology | Part – All Pre-requisites removed from UEENEED002B and UEENEEE025B |
| UEE61107 | Advanced Diploma of Automated Systems Maintenance Engineering | UEE61106 Advanced Diploma of Automated Systems Maintenance Engineering | Part – All Pre-requisites removed from UEENEEE025B |
| UEE61207 | Advanced Diploma of Engineering – Explosion protection | UEE61206 Advanced Diploma of Engineering – Explosion protection | Part – All Pre-requisites removed from UEENEEE025B and amendment of Pre-requisite statements in UEENEEM010B and UEENEEM015B |
| UEE61307 | Advanced Diploma of Electrical – Technology | UEE61306 Advanced Diploma of Electrical – Technology | Part – All Pre-requisites removed from UEENEEG001B and UEENEEG002B |

### 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 |
| RII09 | 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 E-Oz Energy Skills Australia, 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 E-Oz Energy Skills Australia 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 E-Oz Energy Skills Australia/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 E-Oz Energy Skills Australia, www.e-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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Appendix A – Australian Apprenticeships

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- Enclosure A: List of Sample Assessment Instruments

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Volume 2

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Part 1 Definitions/Glossary

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2.1 Competency Standard Units

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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

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.

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 E-Oz Energy Skills Australia 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 E-Oz Energy Skills Australia, a DOI 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. E-Oz Energy Skills Australia 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 E-Oz Energy Skills Australia, who will act as the secretariat.

The NECAC is an integral part of the Electrotechnology Industry and E-Oz Energy Skills Australia 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 E-Oz Energy Skills Australia/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 NSSC Training Package packaging rules for Flexibility

# Transition to NSSC Training Package packaging rules for Flexibility

The following qualifications have been modified to meet the requirements of the National Skills Standards 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, the National Vocation Education and Training Regulator 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 E-Oz Energy Skills Australia. Higher valuation of units selected for importation from sources other than E-Oz Training Packages shall be referred to E-Oz Energy Skills Australia 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 E-Oz Energy Skills Australia 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

#### 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 or Standards for NVR Registered Training Organisations 2012.

#### 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 or Standards for NVR Registered Training Organisations 2012.

Under the AQTF 2010 or Standards for NVR Registered Training Organisations 2012, 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 IICharacteristics 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 IIICharacteristics 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 section 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 IVCharacteristics 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 |

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| DiplomaCharacteristics 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 |

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| Advanced DiplomaCharacteristics 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, E-OZ Energy Skills Australia 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 or Standards for NVR Registered Training Organisations 2012, 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 Skills Standards Council’s (NSSC) 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.nssc.natese.gov.au/training\_packages

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

#### Application of the NSSC 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 NSSC 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 or Standards for NVR Registered Training Organisations 2012 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 E-Oz Energy Skills Australia. Advice on the valuation of units selected for importation from sources other than E-Oz Energy Skills Australia shall be sought from the relevant E-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 E-Oz Energy Skills Australia so that industry is aware of such units and can consider the endorsement of these into the relevant qualification(s).

#### Qualification Mapping

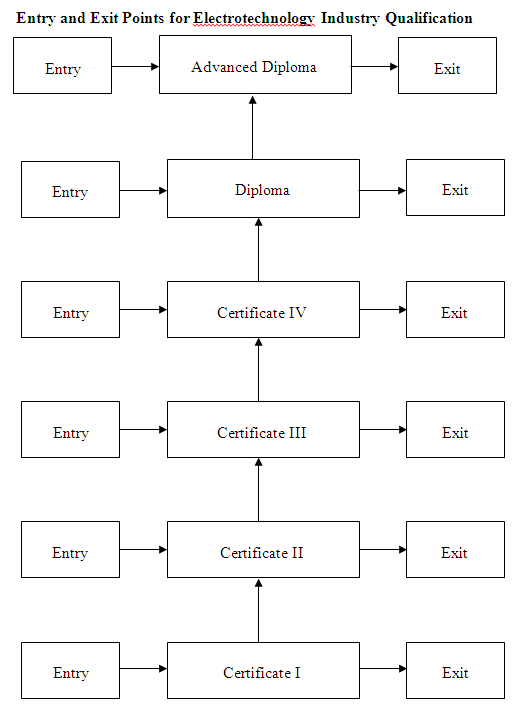
Please refer to Volume 1 Preliminary Information for:

* 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.



For more information on the latest Training Package vocational standards qualifications and qualification pathways visit ElectroComms and EnergyUtilities Industry Skills Council Ltd trading as E-Oz Energy Skills Australia at www.e-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 E-Oz Energy Skills Australia. 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 E-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. Thesee 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.

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| 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.

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| Certificate ICharacteristics of Learning Outcomes Knowledge and skills to perform a defined range of routine and predictable activities.  Applications may include a variety of employment-related skills, including preparatory access and participation skills, broad based induction skills and/or specific workplace skills. They may also include participation in a team or work group. Distinguishing Features of Learning Outcomes Do the competencies enable an individual with this qualification to:   * demonstrate knowledge by recall in a narrow range of areas * demonstrate basic practical skills, such as the use of relevant tools * perform a sequence of routine tasks given clear direction * receive and pass on messages/information |

| Electrotechnology Industry Qualifications | |  |
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| AQF Code | Certificate I Qualifications | Descriptions and Scopes |
| UEE10111 | Certificate I in ElectroComms Skills | Perform basic work activities, including identifying and using a range of components, accessories, materials, tools, equipment, technologies, and customs for carrying out work in the Electrotechnology-Communications Industry. Sectors in the industry are electronics, electrical, communications including telecommunications – voice, data, video and information technology, computer systems, instrumentation, lifts, refrigeration and air conditioning, and renewable/sustainable energy. |

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| Certificate IICharacteristics of Learning Outcomes Knowledge and skills to perform a prescribed range of functions in clearly defined contexts with limited complexity in the range of operations, and involving known routines and procedures.  Applications may include some complex or non-routine activities involving individual responsibility or autonomy and/or collaboration with others as part of a group or team, and some accountability for the quality of outcomes. Distinguishing Features of Learning Outcomes Do the competencies enable an individual with this qualification to:   * demonstrate basic operational knowledge in a moderate range of areas * apply a defined range of skills * apply known solutions to a limited range of predictable problems * perform a range of tasks where choice between a limited range of options is required * assess and record information from varied sources * take limited responsibility for own outputs in work and learning |

| Electrotechnology Industry Qualifications | |  |
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| AQF Code | Certificate II Qualifications | Descriptions and Scopes |
| UEE20111 | Certificate II in Split Air-conditioning and Heat Pump Systems | The installation, commissioning and de-commissioning of single head, split air conditioning and heat pump systems to a prescribed routine where the maximum plant capacity for each system does not exceed 18 kWr.  This includes wall hung, floor and ceiling suspended, cassette and ducted fan coil split systems and water heating heat pump systems. This qualification excludes competencies required for service, repair, maintenance, diagnostic/fault finding and electrical work or the safe and proper installation of commercial refrigeration and air conditioning and heat pump plant and equipment.  Note: 1. The letter "r" denotes "refrigeration" or cooling capacity, not electrical input power.   2. The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 and the Ozone Protection and Synthetic Gas Management Regulations apply to this qualification. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included. |
| UEE20411 | Certificate II in Winding and Assembly | Wind, place and connect coils for small armatures, transformers and solenoids following prescribed routines |
| UEE20511 | Certificate II in Computer Assembly and Repair | Select components and assemble computer to customer specifications and carry out routine hardware repairs (generally by replacement) of known faulty components following prescribed routines. |
| UEE20711 | Certificate II in Data and Voice Communications | Select, assemble, set up and maintain simple equipment and systems to a prescribed routine Certification of telecommunication cabling in buildings and premises. It includes ACMA requirements for Open Cabler Registration. |
| UEE20811 | Certificate II in Electrical Wholesaling | Take and process orders, check and accept stock deliveries, maintain shelf stock and service customers. |
| UEE20911 | Certificate II in Electronic Assembly | Select components, set up and operate component placement machines and carry out rework to a prescribed routine. |
| UEE21011 | Certificate II in Fire Alarms Servicing | Select, assemble and set up of base level fire protection systems in domestic and commercial premises. |
| UEE21211 | Certificate II in Antennae Equipment | Select, assemble, connect and set up TV and radio reception antennae and multiple antenna outlets in buildings and premises |
| UEE21311 | Certificate II in Remote Area Essential Service | Select, assemble, set up and maintain simple equipment and systems following prescribed routines reformat existing units |
| UEE21411 | Certificate II in Remote Area Power Supply Maintenance | Routine maintenance of remote area power supplies consisting of battery banks, generator sets, photovoltaic arrays and wind generators – primarily for use by, but not exclusive to, indigenous communities. |
| UEE21611 | Certificate II in Security Assembly and Setup | Select, assemble and set up of wired and wireless base level security systems following prescribe routines. |
| UEE21711 | Certificate II in Technical Support | Collect/receive and store stock at work sites, set up and store equipment and tools, assist in installation, fault finding, maintenance and repair activities. |
| UEE21911 | Certificate II in Electronics | Select, assemble, set up and maintain electronic devices following prescribed routines. |
| UEE22011 | Certificate II in Electrotechnology (Career Start) | Work entry program providing grounding in safety and basic skills and knowledge for work in any Electrotechnology discipline. |
| UEE22111 | Certificate II in Sustainable Energy (Career Start) | Work entry program providing grounding in safety and adopted and emerging sustainable energy systems. |

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| Certificate IIICharacteristics of Learning Outcomes Knowledge and competencies to perform a defined range of skilled operations, within a range of broader related activities and involving known routines, methods and procedures. Performance would occur across a range of roles and in a variety of contexts. Some discretion and judgement would be required in the selection of equipment, services or contingency measures, within known time constraints, and with some complexity in the extent and choice of options available.  Application will involve selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specified problems.  Applications may involve some responsibility for others. Participation in teams including group or team coordination may be involved. Distinguishing Features of Learning Outcomes Do the competencies enable an individual with this qualification to:   * demonstrate some relevant theoretical knowledge * apply a range of well developed skills * apply known solutions to a variety of predictable problems * perform processes that require a range of well developed skills where some discretion and judgement is required * interpret available information, using discretion and judgement * take responsibility for own outputs in work and learning * take limited responsibility for the output of others |

| Electrotechnology Industry Qualifications | |  | |
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| AQF Code | Certificate III Qualifications | Descriptions and Scopes | |
| UEE30111 | Certificate III in Business Equipment | Install, set up, test, fault find, repair and maintain photocopiers, fax machines etc | |
| UEE30211 | Certificate III in Computer Systems Equipment | Select, install, set up, test, fault find, repair and maintain computer equipment for data storage, personal computer and networks, measurement/analysis and control. | |
| UEE30311 | Certificate III in Custom Electronics Installations | Select, install, set up and test surround sound, home theatre and integration aspects for ‘intelligent houses’. It covers the scope of CEDIA certification level 2 | |
| UEE30411 | Certificate III in Data and Voice Communications | Select, install, set up, test, fault find, repair and maintain telecommunications and high performance data services in buildings and premises. It includes ACMA requirements for Open Cabler Registration. | |
| UEE30611 | Certificate III in Electrical Machine Repair | | Motor, transformer and control gear overhaul and repair, including rewinding |
| UEE30711 | Certificate III in Switchgear and Control Gear | | Construction, assembly and wiring of switchboards and control panels |
| UEE30811 | Certificate III in Electrotechnology Electrician | | Select, install, set up, test, fault find, repair and maintain electrical systems and equipment in building and premises. It includes ERAC requirements for an ‘Electrician’s licence’. |
| UEE30911 | Certificate III in Electronics and Communications | Select, install, set up, test, fault find, repair and maintain electronic equipment and devices at component/sub-assembly level with options in communications, audio, video and TV, personal computer and networks, security and custom installations | |
| UEE31011 | Certificate III in Fire Protection Control | Installation and set up of fire protection systems in multiple, commercial and industrial premises. | |
| UEE31111 | Certificate III in Gaming Electronics | Select, install, set up, test, fault find, repair and maintain gaming machines used in registered clubs and hotels and dedicated games machines used in electronic game venues. | |
| UEE31211 | Certificate III in Instrumentation and Control | Select, install, set up, test, fault find, repair and maintain systems and devices for measurement and recording of physical/chemical phenomenon and related process control | |
| UEE31411 | Certificate III in Security Equipment | Installation and pre-commissioning set up of wired and wireless security systems in multiple, commercial industrial premises. | |
| UEE31511 | Certificate III in Rail – Communications and Networks | Select, install, commission, fault find and maintain radio and dedicated telecommunications networks in rail equipment. | |
| UEE32011 | Certificate III in Renewable Energy - ELV | Select, install, set up, test, fault find, repair and maintain renewable energy equipment and systems. It does not include electrical work covered by licensing requirements declared by the Electrical Regulators Advisory Council (ERAC) for an ‘Electrician’s licence’. | |
| UEE32111 | Certificate III in Appliance Service | Set up, service and repair electrical, and refrigerated appliances with electives in gas appliances  Note: The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 may apply to this qualification. Prior to planning the delivery of any training and/or assessment activities all legislative and regulatory requirements shall be identified and included. | |
| UEE32211 | Certificate III in Air-conditioning and Refrigeration | Select components, install, set up, test, fault find, repair and maintain refrigeration systems and equipment that apply to food storage and preservation and air conditioning and air distribution equipment in buildings and premises. It includes regulatory requirements for purchasing and handling refrigerants. | |
| UEE33011 | Certificate III in Electrical Fitting | This qualification provides competencies to manufacture, fit, assemble, erect, operate, test, fault find, alter, repair electrical equipment and includes electrical wiring work only if that work is associated with assembling, maintaining, terminating or altering the wiring between electrical components within a plant or machinery. An electrical fitter is not authorised to install any electrical wiring systems within an electrical installation as prescribed by definitions contained in AS/NZS 3000.  Electrical equipment means any appliance, article, accessory, wire, fitting, cable, conduit or apparatus that generates, uses, conveys or controls (or that is intended to generate, use, convey or control) electricity above extra low voltage. | |

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| Certificate IVCharacteristics of Learning Outcomes Knowledge and competencies covering a broad range of activities performed in a variety of complex and non-routine contexts. Leadership and guidance are involved in organising activities. In the application and planning of the skills and in contributing to technical solutions in non-routine or contingency situations.  Applications will include evaluating and analysing current practices, developing new criteria and procedures for current practices, as well as responsibility for and limited organisation of others. Distinguishing Features of Learning Outcomes Do the competencies enable an individual with this qualification to:   * demonstrate understanding of a broad knowledge base incorporating some theoretical concepts * apply solutions to a defined range of unpredictable problems * identify and apply skill and knowledge areas to a wide variety of contexts, 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 |

| Electrotechnology Industry Qualifications | |  |
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| AQF Code | Certificate IV Qualifications | Descriptions and Scopes |
| UEE40111 | Certificate IV in Computer Systems | Select, install, commission, fault find and maintain data processing, communications and control aspects of systems used for monitoring and control of systems for access, surveillance, safety and effective operation of manufacturing, buildings, structures, premises, precincts and personal computer and networks |
| UEE40211 | Certificate IV in Electrical – Data and Voice Communications | Select, install, commission, fault find and maintain electrical and communications systems and equipment in building and premises. It includes ERAC requirements for an ‘Electrician’s licence’ and ACMA requirements for Open Cabler Registration. |
| UEE40311 | Certificate IV in Electrical Installation Inspection and Audits | Mandatory and contractual inspections of electrical systems and auditing of entities for compliance with electrical safety requirements |
| UEE40411 | Certificate IV in Electrical – Instrumentation | Select, install, commission, fault find and maintain electrical and instrumentation equipment in buildings and premises and instrumentation systems and core instrumentation equipment for process and control. It includes ERAC requirements for an ‘Electrician’s licence’. |
| UEE40511 | Certificate IV in Electrical – Air-conditioning Systems | Select, install, commission, fault find and maintain electrical systems and equipment in buildings and premises and core refrigeration/air conditioning equipment. It includes ERAC requirements for an ‘Electrician’s licence’ and regulatory requirements for purchasing and handling refrigerants. |
| UEE40611 | Certificate IV in Electrotechnology – Systems Electrician | Select, install, commission, fault find and maintain electrical systems and equipment with options, typically in explosion protection; electrical machines; electrical inspection; safety auditing; contracting; lifts; energy supply/distribution |
| UEE40711 | Certificate IV in Electronics and Communications | Select, install, commission, fault find and maintain audio/video and data systems, computer and network hardware, security systems, wireless and communications systems and electronic aspects of medical equipment |
| UEE40811 | Certificate IV in Electrical – Fire Protection Control Systems | Select, install, commission, fault find and maintain fire protection control systems in buildings. It includes ERAC requirements for an ‘Electrician’s licence’. |
| UEE40911 | Certificate IV in Industrial Electronics and Control | Select, install, commission, fault find and maintain equipment and systems for the control of plant, machines and processes |
| UEE41011 | Certificate IV in Energy Management and Control | This qualification provides competencies to develop strategies for the reduction of energy in buildings and to recommend changes in the way in which energy is controlled in the building either by the installation of new control equipment or by the modification or re-programming of that existing. |
| UEE41111 | Certificate IV in Electrical – Lift Systems | Select, install, commission, fault find and maintain of lifts, escalators and associated equipment. It includes ERAC requirements for an ‘Electrician’s licence’. |
| UEE41211 | Certificate IV in Electrical – Rail Signalling | Select, install, commission, fault find and maintain rail signalling equipment and systems. It includes ERAC requirements for an ‘Electrician’s licence’. |
| UEE41511 | Certificate IV in Video and Audio Systems | Service high end audio, video, display systems and HDTV |
| UEE41611 | Certificate IV in Renewable Energy | Select, install, commission, fault find and maintain multiple renewable energy sources and equipment for control of energy use |
| UEE41711 | Certificate IV in Rail – Communications and Network Systems | Select, install, commission, fault find and maintain radio and dedicated telecommunications networks in rail systems |
| UEE41911 | Certificate IV in Electrical – Renewable Energy | Select, install, set up, test, fault find, repair and maintain electrical systems and equipment in buildings and premises. It includes ERAC requirements for an ‘Electrician’s licence’ and competencies to select, install, set up, test, fault find, repair and maintain renewable energy equipment and systems. |
| UEE42011 | Certificate IV in Electrical – Photovoltaic Systems | Select, install, set up, test, fault find, repair and maintain electrical systems and equipment in buildings and premises. It includes ERAC requirements for an ‘Electrician’s licence’ and competencies to select, install, set up, test, fault find, repair and maintain photovoltaic systems and associated equipment |
| UEE42111 | Certificate IV in Electrotechnology – Electrical Contracting | This qualification provides competencies to set up and manage an electrical contracting business. It includes competencies required by regulations for an electrical contracting licence. |
| UEE42211 | Certificate IV in Instrumentation and Control | This qualification provides competencies to select, install, set up, test, fault find, repair, maintain and commission systems and devices for measurement and recording of physical/chemical phenomenon and related process control systems. |
| UEE42611 | Certificate IV in Hazardous areas - Electrical | This qualification provides competencies to supervise selection, installation, commissioning maintenance and testing of explosion-protected equipment and systems for control and monitoring of plant and processes. The qualification provides competencies in working with explosion protections techniques with elections in how they apply to coal mining, gas and dust atmospheres. It includes ERAC requirements for an ‘Electrician’s licence’ and competencies to select, install, set up, test, fault find, repair and maintain stand alone renewable energy equipment and systems. |
| UEE42711 | Certificate IV in Refrigeration and Air-conditioning Servicing | High level fault diagnosis and rectification, commissioning and maintenance of refrigeration systems and equipment that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications. It includes regulatory requirements for purchasing and handling refrigerants. |
| UEE42811 | Certificate IV in Air-conditioning Systems Energy Management and Control | This qualification provides competencies to develop strategies for the reduction of energy in buildings and to recommend changes in the way in which energy is controlled in the building either by the installation of new control equipment or by the modification or re-programming of that existing. It includes regulatory requirements for purchasing and handling refrigerants. |
| UEE42911 | Certificate IV in Refrigeration and Air-conditioning Systems | This qualification provides the competencies to determine heat loads and select equipment for basic commercial refrigeration or residential air conditioning applications. It includes regulatory requirements for purchasing and handling refrigerants. |
| UEE43011 | Certificate IV in Electrical Equipment and Systems | This qualification provides competencies to manufacture, fit, assemble, erect, operate, test, fault find, alter, repair electrical equipment and includes electrical wiring work only if that work is associated with assembling, maintaining, terminating or altering the wiring between electrical components within a plant or machinery. An electrical fitter is not authorised to install any electrical wiring systems within an electrical installation as prescribed by definitions contained in AS/NZS 3000.  Electrical equipment means any appliance, article, accessory, wire, fitting, cable, conduit or apparatus that generates, uses, conveys or controls (or that is intended to generate, use, convey or control) electricity above extra low voltage. |
| UEE43111 | Certificate IV in Energy Efficiency and Assessment | This qualification provides competencies to conduct a residential, office and retail dwellings residential and Small Medium Enterprises (SME) energy audit and to develop energy efficient strategies to reduce an energy use in a range of energy services. The qualification also addresses the environmental and legislative contexts with the fundamental energy audit methodology to develop the initiative and solutions of sustainability and financial viability.  The core competencies of this qualification meets the prescribed requirements for ERAC requirements for an ‘Electrician’s licence’. |
| UEE43211 | Certificate IV in Industrial Automation and Control | This qualification provides competencies to assemble, set up and program, fault find, repair and maintain automated equipment, apparatus, associated circuits and systems. It’s includes the supervision of plant maintenance programs and providing technical advice to process staff. |

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| DiplomaCharacteristics of Learning Outcomes Planning and initiating alternative approaches to the application of knowledge and skills across a broad range of contexts/situations, e.g. technical and/or management, evaluation and coordination.  Performance involves self directed application of knowledge and skills, in substantial depth in some areas, and judgement is required in planning and selecting appropriate equipment, services and techniques for self and others.  Applications involve participation in development of strategic initiatives as well as personal responsibility and autonomy in performing complex technical operations or organising others. It may involve participation in teams, including teams concerned with planning and evaluation functions. Group or team coordination may be involved.  The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level. Distinguishing Features of Learning Outcomes Do the competencies or learning outcomes enable an individual with this qualification to:   * demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas * analyse and plan approaches to technical problems or management requirements * transfer and apply theoretical concepts and/or technical or creative skills to a range of situations * evaluate information, using it to forecast for planning or research purposes * take responsibility for own outputs in relation to broad quantity and quality parameters * take some responsibility for the achievement of group outcomes |

| Electrotechnology Industry Qualifications | |  |
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| AQF Code | Diploma Qualifications | Descriptions and Scopes |
| UEE50111 | Diploma of Computer Systems Engineering | Develop, select, install, commission and maintain computer equipment, networks and systems |
| UEE50211 | Diploma of Electrical and Instrumentation | Select, install, commission, maintain and diagnose faults/malfunctions on electrical, instrumentation and control equipment and systems. It includes ERAC requirements for an ‘Electrician’s licence’. |
| UEE50311 | Diploma of Electrical and Refrigeration and Air-conditioning | Select, install, commission, maintain and diagnose faults/malfunctions on refrigeration systems and equipment that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications and associated electrical systems. It includes ERAC requirements for an ‘Electrician’s licence’ and regulatory requirements for purchasing and handling refrigerants. |
| UEE50411 | Diploma of Electrical Engineering | Develop, select, commission, maintain and diagnose faults/malfunctions on advanced electrical equipment and systems. It includes ERAC requirements for an ‘Electrician’s licence’. |
| UEE50511 | Diploma of Electronics and Communications Engineering | Develop, select, commission, maintain and diagnose faults/malfunctions of electronic components/sub-assemblies, apparatus and systems |
| UEE50711 | Diploma of Renewable Energy Engineering | Develop, select, commission, maintain and diagnose faults/malfunctions on large scale renewable energy equipment and systems |
| UEE50811 | Diploma of Research and Development | Assist professional in planning, research and development of electrotechnology products and services |
| UEE50911 | Diploma of Industrial Electronics and Control Engineering | Develop, select, commission, maintain and diagnose faults/malfunctions of equipment and systems for the monitoring and control of plant, machines and processes |
| UEE51011 | Diploma of Instrumentation and Control Engineering | This qualification provides competencies to install, set up, test, develop, select, commission, maintain and diagnose faults/malfunctions of equipment and systems for the measurement, recording, monitoring and control of physical/chemical phenomenon and related process control systems. |
| UEE51111 | Diploma of Engineering Technology - Refrigeration and Air-conditioning | This qualification provides enabling competencies to develop systems and select equipment for heating, ventilation, air conditioning and/or refrigeration systems. |
| UEE51211 | Diploma of Air-conditioning and Refrigeration Engineering | Develop systems, select equipment, and commission, maintain and diagnose faults/malfunctions of refrigeration systems and equipment that apply to commercial food storage and preservation and air conditioning and air distribution equipment and special applications. It includes regulatory requirements for purchasing and handling refrigerants. |
| UEE53011 | Diploma in Electrical Equipment and Systems Engineering | This qualification provides competencies to develop, select, commission, maintain and diagnose faults/malfunctions on advanced electrical equipment and systems. |

|  |
| --- |
| Advanced DiplomaCharacteristics of Learning Outcomes Analysis, design, planning, execution and evaluation across a range of technical and/or management functions, including development of new criteria or applications or knowledge or procedures.  The application of a significant range of fundamental principles and complex techniques across a wise and often unpredictable variety of contexts in relation to either varied or highly specific functions. Contribution to the development of a broad plan, budget or strategy is involved and accountability and responsibility for self and others in achieving the outcomes is involved.  Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to products, services, operations or procedures.  The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level. Distinguishing Features of Learning Outcomes Do the competencies or learning outcomes enable an individual with this qualification to:   * demonstrate understanding of specialised knowledge with depth in some areas * analyse, diagnose, design and execute judgements across a broad range of technical or management functions * generate ideas through the analysis of information and concepts at an abstract level * demonstrate a command of wide ranging, highly specialised technical, creative or conceptual skills * demonstrate accountability for personal outputs within broad parameters * demonstrate accountability for personal and group outcomes within broad parameters |

| Electrotechnology Industry Qualifications | |  |
| --- | --- | --- |
| AQF Code | Advanced Diploma Qualifications | Descriptions and Scopes |
| UEE60211 | Advanced Diploma of Electronics and Communications Engineering | Design and validate/evaluate electronics and communications equipment and systems, computer and network based systems, manage risk, estimate and manage projects and provide technical advice/sales |
| UEE60411 | Advanced Diploma of Computer Systems Engineering | Design, install/validate/evaluate and administer computer networks and systems, manage risk, estimate and manage projects and provide technical advice/sales. |
| UEE60611 | Advanced Diploma of Industrial Electronics and Control Engineering | Design and validate/evaluate control equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales. |
| UEE60911 | Advanced Diploma of Renewable Energy Engineering | Design and validate/evaluate renewable energy equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales. |
| UEE61111 | Advanced Diploma of Automated Systems Maintenance Engineering | Monitor/validate/evaluate automated equipment and systems, manage risk, develop and manage maintenance programs, and provide technical advice |
| UEE61211 | Advanced Diploma of Engineering – Explosion protection | Design and validate/evaluate electrical or control equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales. It includes competencies in explosion-protection necessary for areas where flammable materials are present. |
| UEE61511 | Advanced Diploma of Instrumentation and Control Engineering | This qualification provides competencies to design and validate/evaluate process control equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales. It’s also provides competencies to install, set up, test, develop, select, commission, maintain, diagnose faults/malfunctions of equipment and systems |
| UEE61711 | Advanced Diploma of Engineering Technology - Electronic | Prepare to design and validate/evaluate electronics and communication equipment and systems and provide technical advice/sales. |
| UEE61811 | Advanced Diploma of Engineering Technology - Computer Systems | Prepare to design, install/validate/evaluate and administer computer networks and systems and provide technical advice/sales. |
| UEE62011 | Advanced Diploma of Engineering Technology - Renewable Energy | Prepare to design and validate/evaluate renewable energy equipment and systems and provide technical advice/sales |
| UEE62111 | Advanced Diploma of Engineering Technology - Electrical | Prepare to design and validate/evaluate electrical equipment and systems and provide technical advice/sales. |
| UEE62211 | Advanced Diploma of Electrical – Engineering | This qualification provides competencies to design and validate/evaluate electrical equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.  It develops competencies in the ethical and responsible application of mathematics, science, engineering techniques, Standards and Codes of Practice, engineering design practices, supervision and management of physical, human and financial resources in engineering.  The core competencies of this qualification meet the prescribed requirements for Engineering Associate membership of Engineers Australia and ERAC requirements for an ‘Electrician’s licence’.  Participants seeking Engineers Australia membership should ensure that their training provider is accredited by that body to provide Engineering Education Programs at the level of Engineering Associate |
| UEE62311 | Advanced Diploma of Electrical Engineering – Coal Mining | This qualification provides competencies to design and validate/evaluate coal mining electrical equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.  It develops competencies in the ethical and responsible application of mathematics, science, engineering techniques, Standards and Codes of Practice, engineering design practices, supervision and management of physical, human and financial resources in engineering.  The core competencies of this qualification meets the prescribed requirements for Engineering Associate membership of Engineers Australia and ERAC requirements for an ‘Electrician’s licence.  Participants seeking Engineers Australia membership should ensure that their training provider is accredited by that body to provide Engineering Education Programs at the level of Engineering Associate |
| UEE62411 | Advanced Diploma of Engineering Technology - Air-conditioning and Refrigeration | Prepare to design and validate/evaluate refrigeration and air conditioning equipment and systems and provide technical advice/sales |
| UEE62511 | Advanced Diploma of Air-conditioning and Refrigeration Engineering | Design and validate/evaluate refrigeration and air conditioning equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales. It includes regulatory requirements for purchasing and handling refrigerants.  It develops competencies in the ethical and responsible application of mathematics, science, engineering techniques, Standards and Codes of Practice, engineering design practices, supervision and management of physical, human and financial resources in Refrigeration and Air Conditioning engineering. It includes regulatory requirements for purchasing and handling refrigerants.  The core competencies of this qualification meet the prescribed requirements for Engineering Associate membership of Engineers Australia.  Participants seeking Engineers Australia membership should ensure that their training provider is accredited by that body to provide Engineering Education Programs at the level of Engineering Associate. |
| UEE63011 | Advanced Diploma in Electrical Systems Engineering | This qualification provides competencies to develop, design and validate/evaluate, select, commission, maintain and diagnose faults/malfunctions on advanced electrical equipment and systems. Also, provides skills to manage risk, estimate and manage projects and provide technical advice/sales.  It develops competencies in the ethical and responsible application of mathematics, science, engineering techniques, Standards and Codes of Practice, engineering design practices, supervision and management of physical, human and financial resources in engineering. |

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 | | | | | Packaging Forumla | | |
| Group A | Group B | Group C | Group D | Group E | Electives | Imported | Regulated |
| UEE10111 | Certificate I in ElectroComms Skills | 120 | 60 | 0-30 | 30-60 |  |  |  | 33% | 17% |  |
| UEE20111 | Certificate II in Split Air-conditioning and Heat Pumps Systems | 340 | 20 | 0-20 | 0-20 |  |  |  | 6% | 6% | Yes |
| UEE20411 | Certificate II in Winding and Assembly | 200 | 160 | 0-60 | 100-160 |  |  |  | 44% | 17% |  |
| UEE20511 | Certificate II in Computer Assembly and Repair | 200 | 160 | 0-60 | 100-160 |  |  |  | 44% | 17% |  |
| UEE20711 | Certificate II in Data and Voice Communications | 380 | 40 | 0-20 | 20-40 |  |  |  | 10% | 5% | Yes |
| UEE20811 | Certificate II in Electrical Wholesaling | 160 | 200 | 0-60 | 140-200 |  |  |  | 56% | 17% |  |
| UEE20911 | Certificate II in Electronic Assembly | 220 | 140 | 0-60 | 80-140 |  |  |  | 39% | 17% |  |
| UEE21011 | Certificate II in Fire Alarms Servicing | 220 | 140 | 0-60 | 80-140 |  |  |  | 39% | 17% |  |
| UEE21211 | Certificate II in Antennae Equipment | 240 | 120 | 0-60 | 60-120 |  |  |  | 33% | 17% |  |
| UEE21311 | Certificate II in Remote Area Essential Service | 160 | 200 | 0-160 | 40-200 |  |  |  | 56% | 44% |  |
| UEE21411 | Certificate II in Remote Area Power Supply Maintenance | 200 | 160 | 0-60 | 100-160 |  |  |  | 44% | 17% |  |
| UEE21611 | Certificate II in Security Assembly and Set-up | 240 | 120 | 0-60 | 60-120 |  |  |  | 33% | 17% |  |
| UEE21711 | Certificate II in Technical Support | 200 | 160 | 0-60 | 100-160 |  |  |  | 44% | 17% |  |
| UEE21911 | Certificate II in Electronics | 240 | 120 | 0-60 | 60-120 |  |  |  | 33% | 17% |  |
| UEE22011 | Certificate II in Electrotechnology (Career Start) | 220 | 140 | 0-60 | 80-140 |  |  |  | 39% | 17% |  |
| UEE22111 | Certificate II in Sustainable Energy (Career Start) | 200 | 160 | 0-60 | 100-160 |  |  |  | 44% | 17% |  |
| UEE30111 | Certificate III in Business Equipment | 700 | 360 | 0-180 | 180-360 |  |  |  | 34% | 17% |  |
| UEE30211 | Certificate III in Computer Systems Equipment | 560 | 500 | 0-150 | 350-500 |  |  |  | 47% | 14% |  |
| UEE30311 | Certificate III in Custom Electronics Installations | 600 | 460 | 0-150 | 310-460 |  |  |  | 43% | 14% |  |
| UEE30411 | Certificate III in Data and Voice Communications | 740 | 320 | 0-100 | 220-320 |  |  |  | 30% | 9% | Yes |
| UEE30611 | Certificate III in Electrical Machine Repair | 880 | 180 | 0-60 | 120-180 |  |  |  | 17% | 6% | Yes |
| UEE30711 | Certificate III in Switchgear and Controlgear | 900 | 160 | 0-60 | 180-160 |  |  |  | 26% | 6% | Yes |
| UEE30811 | Certificate III in Electrotechnology Electrician | 920 | 140 | 0-60 | 80-140 |  |  |  | 13% | 6% | Yes |
| UEE30911 | Certificate III in Electronics and Communications | 680 | 380 | 0-180 | 200-380 |  |  |  | 36% | 17% |  |
| UEE31011 | Certificate III in Fire Protection Control | 690 | 370 | 0-170 | 200-370 |  |  |  | 35% | 16% | Yes |
| UEE31111 | Certificate III in Gaming Electronics | 700 | 360 | 0-160 | 200-360 |  |  |  | 34% | 15% | Yes |
| UEE31211 | Certificate III in Instrumentation and Control | 920 | 140 | 0-60 | 80-140 |  |  |  | 13% | 6% | Yes |
| UEE31411 | Certificate III in Security Equipment | 640 | 420 | 0-170 | 250-420 |  |  |  | 40% | 16% |  |
| UEE31511 | Certificate III in Rail – Communications and Networks | 680 | 380 | 0-170 | 210-380 |  |  |  | 36% | 16% |  |
| UEE32011 | Certificate III in Renewable Energy - ELV | 700 | 360 | 0-170 | 190-360 |  |  |  | 34% | 16% |  |
| UEE32111 | Certificate III in Appliance Service | 840 | 220 | 0-100 | 120-220 |  |  |  | 21% | 9% | Yes |
| UEE32211 | Certificate III in Air-conditioning and Refrigeration | 1000 | 60 | 0-30 | 30-60 |  |  |  | 6% | 3% | Yes |
| UEE33011 | Certificate III in Electrical Fitting | 820 | 240 | 0-60 | 180-240 |  |  |  | 23% | 6% | Yes |
| UEE40111 | Certificate IV in Computer Systems | 600 | 680 | 0-220 | 0-500 | 180-680 |  |  | 53% | 17% |  |
| UEE40211 | Certificate IV in Electrical – Data and Voice Communications | 1120 | 160 | 0-80 | 0-80 | 80-160 |  |  | 13% | 6% | Yes |
| UEE40311 | Certificate IV in Installation Inspection and Audits | 1060 | 220 | 0-80 | 0-110 | 110-220 |  |  | 17% | 6% | Yes |
| UEE40411 | Certificate IV in Electrical – Instrumentation | 1160 | 120 | 0-60 | 0-60 | 60-120 |  |  | 9% | 5% | Yes |
| UEE40511 | Certificate IV in Electrical – Air-conditioning Split Systems | 1120 | 160 | 0-80 | 0-80 | 80-160 |  |  | 13% | 6% | Yes |
| UEE40611 | Certificate IV in Electrotechnology – Systems Electrician | 960 | 320 | 0-100 | 0-100 | 220-320 |  |  | 25% | 8% | Yes |
| UEE40711 | Certificate IV in Electronics and Communications | 720 | 560 | 0-220 | 0-360 | 200-560 |  |  | 44% | 17% |  |
| UEE40811 | Certificate IV in Electrical – Fire Protection Control Systems | 1180 | 100 | 0-60 | 0-60 | 40-100 |  |  | 8% | 5% | Yes |
| UEE40911 | Certificate IV in Industrial Electronics and Control | 1080 | 200 | 0-100 | 0-100 | 100-200 |  |  | 16% | 8% | Yes |
| UEE41011 | Certificate IV in Energy Management and Control | 980 | 300 | 0-100 | 0-100 | 200-300 |  |  | 23% | 8% | Yes |
| UEE41111 | Certificate IV in Electrical – Lift Systems | 1200 | 80 | 0-20 | 0-20 | 60-60 |  |  | 6% | 2% | Yes |
| UEE41211 | Certificate IV in Electrical – Rail Signalling | 1280 | 70 | 0-30 | 0-40 | 30-70 |  |  | 5% | 2% | Yes |
| UEE41511 | Certificate IV in Video and Audio Systems | 840 | 440 | 0-220 | 0-220 | 220-440 |  |  | 34% | 17% |  |
| UEE41611 | Certificate IV in Renewable Energy | 740 | 540 | 0-220 | 0-320 | 220-380 |  |  | 42% | 17% |  |
| UEE41711 | Certificate IV in Rail – Communications and Network Systems | 720 | 560 | 0-220 | 0-340 | 220-560 |  |  | 44% | 17% |  |
| UEE41911 | Certificate IV in Electrical – Renewable Energy | 1120 | 160 | 0-50 | 0-120 | 40-160 |  |  | 13% | 4% | Yes |
| UEE42011 | Certificate IV in Electrical – Photovoltaic systems | 1100 | 180 | 0-90 | 0-90 | 90-180 |  |  | 14% | 7% | Yes |
| UEE42111 | Certificate IV in Electrotechnology – Electrical Contracting | 1040 | 240 | 0-120 | 0-120 | 120-240 |  |  | 19% | 9% | Yes |
| UEE42211 | Certificate IV in Instrumentation and Control | 1080 | 200 | 0-60 | 0-100 | 100-200 |  |  | 16% | 5% | Yes |
| UEE42611 | Certificate IV in Hazardous areas - Electrical | 980 | 300 | 0-60 | 0-80 | 220-300 |  |  | 23% | 5% | Yes |
| UEE42711 | Certificate IV in Air-conditioning and Refrigeration Servicing | 1100 | 180 | 0-90 | 0-90 | 90-180 |  |  | 14% | 7% | Yes |
| UEE42811 | Certificate IV in Air-conditioning Systems Energy Management and Control | 1120 | 160 | 0-80 | 0-80 | 80-160 |  |  | 13% | 6% | Yes |
| UEE42911 | Certificate IV in Refrigeration and Air-conditioning Systems | 1230 | 50 | 0-20 | 0-30 | 20-50 |  |  | 4% | 2% | Yes |
| UEE43011 | Certificate IV in Electrical Equipment and Systems | 860 | 420 | 0-60 | 0-200 | 220-420 |  |  | 33% | 5% | Yes |
| UEE43111 | Certificate IV in Energy Efficiency and Assessment | 1020 | 260 | 0-120 | 0-120 | 140-260 |  |  | 20% | 9% | Yes |
| UEE43211 | Certificate IV in Industrial Automation and Control | 520 | 760 | 0-220 | 0-540 | 220-760 |  |  | 59% | 17% |  |
| UEE50111 | Diploma of Computer Systems Engineering | 140 | 1460 | 0-270 | 0-880 | 0-580 | 580-1040 |  | 91% | 17% |  |
| UEE50211 | Diploma of Electrical and Instrumentation | 1520 | 80 | 0-20 | 0-20 | 0-20 | 60-80 |  | 5% | 1% | Yes |
| UEE50311 | Diploma of Electrical and Refrigeration and Air-conditioning | 1620 | 80 | 0-20 | 0-20 | 0-20 | 40-60 |  | 5% | 1% | Yes |
| UEE50411 | Diploma of Electrical Engineering | 1000 | 600 | 0-270 | 0-100 | 0-240 | 260-600 |  | 38% | 17% | Yes |
| UEE50511 | Diploma of Electronics and Communications Engineering | 140 | 1460 | 0-270 | 0-920 | 260-580 | 280-1200 |  | 91% | 17% |  |
| UEE50711 | Diploma of Renewable Energy Engineering | 1080 | 520 | 0-260 | 0-100 | 0-240 | 260-340 |  | 33% | 16% | Yes |
| UEE50811 | Diploma of Research and Development | 720 | 880 | 0-270 | 0-500 | 0-240 | 140-240 |  | 55% | 17% |  |
| UEE50911 | Diploma of Industrial Electronics and Control Engineering | 1120 | 480 | 0-220 | 0-100 | 0-120 | 260-480 |  | 30% | 14% | Yes |
| UEE51011 | Diploma of Instrumentation and Control Engineering | 1120 | 480 | 0-180 | 0-100 | 0-120 | 260-480 |  | 30% | 11% | Yes |
| UEE51111 | Diploma of Engineering Technology - Refrigeration and Air-conditioning | 920 | 680 | 0-270 | 0-100 | 60-170 | 270-620 |  | 43% | 17% |  |
| UEE51211 | Diploma of Air-conditioning and Refrigeration Engineering | 1470 | 130 | 0-60 | 0-30 | 0-50 | 50-130 |  | 8% | 4% | Yes |
| UEE53011 | Diploma of Electrical Systems Engineering | 960 | 640 | 0-270 | 0-140 | 0-240 | 260-640 |  | 40% | 17% | Yes |
| UEE60211 | Advanced Diploma of Electronics and Communications Engineering | 280 | 1880 | 0-360 | 0-900 | 0-280 | 0-260 | 520-1320 | 87% | 17% |  |
| UEE60411 | Advanced Diploma of Computer Systems Engineering | 280 | 1880 | 0-360 | 0-900 | 0-280 | 0-280 | 420-1600 | 87% | 17% |  |
| UEE60611 | Advanced Diploma of Industrial Electronics and Control Engineering | 1800 | 360 | 0-180 | 0-60 | 0-100 | 0-60 | 160-360 | 17% | 8% | Yes |
| UEE60911 | Advanced Diploma of Renewable Energy Engineering | 1820 | 340 | 0-170 | 0-60 | 0-100 | 0-60 | 160-340 | 16% | 8% | Yes |
| UEE61111 | Advanced Diploma of Automated Systems Maintenance Engineering | 1120 | 1040 | 0-360 | 0-280 | 0-220 | 0-220 | 320-1040 | 48% | 17% |  |
| UEE61211 | Advanced Diploma of Engineering – Explosion protection | 1780 | 380 | 0-170 | 0-60 | 0-80 | 0-60 | 160-380 | 18% | 8% | Yes |
| UEE61511 | Advanced Diploma of Instrumentation and Control Engineering | 1740 | 420 | 0-170 | 0-80 | 0-80 | 0-80 | 180-420 | 19% | 8% | Yes |
| UEE61711 | Advanced Diploma of Engineering Technology - Electronics | 1160 | 1000 | 0-360 | 0-200 | 0-200 | 0-300 | 280-1000 | 46% | 17% |  |
| UEE61811 | Advanced Diploma of Engineering Technology - Computer Systems | 1160 | 1000 | 0-360 | 0-200 | 0-200 | 0-300 | 280-1000 | 46% | 17% |  |
| UEE62011 | Advanced Diploma of Engineering Technology - Renewable Energy | 1260 | 900 | 0-360 | 0-240 | 0-220 | 0-220 | 280-320 | 42% | 17% |  |
| UEE62111 | Advanced Diploma of Engineering Technology - Electrical | 1440 | 720 | 0-360 | 0-160 | 0-220 | 0-220 | 200-720 | 33% | 17% |  |
| UEE62211 | Advanced Diploma of Electrical - Engineering | 1680 | 480 | 0-220 | 0-60 | 0-100 | 0-60 | 260-480 | 22% | 10% | Yes |
| UEE62311 | Advanced Diploma of Electrical Engineering – Coal Mining | 1840 | 320 | 0-160 | 0-60 | 0-100 | 0-60 | 160-320 | 15% | 7% | Yes |
| UEE62411 | Advanced Diploma of Engineering Technology - Air-conditioning and Refrigeration | 1360 | 800 | 0-350 | 0-100 | 120-320 | 200-360 | 360-480 | 37% | 16% |  |
| UEE62511 | Advanced Diploma of Air-conditioning and Refrigeration Engineering | 1910 | 250 | 0-120 | 0-30 | 0-60 | 0-120 | 120-250 | 12% | 6% | Yes |
| UEE63011 | Advanced Diploma of Electrical Systems Engineering | 1580 | 580 | 0-220 | 0-160 | 0-160 | 0-160 | 200-580 | 27% | 10% | Yes |

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 asan 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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| Initiative and enterprise |  |
| Planning and organising | Collecting, analysing and organising information  Planning and organising activities |
| Self-management |  |
| Learning |  |
| Technology | Using technology |

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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 E-OZ Energy Skills Australia 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 DOI 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 E-Oz Energy Skills Australia 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 E-Oz Energy Skills Australia.

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 E-Oz Energy Skills Australia or its successor.
* Suggestions and proposals for changes from all parties are welcomed. These should be documented and submitted to E-Oz Energy Skills Australia 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 | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEA101A | Assemble electronic components | 40 | 2 | E101A | UEE20911 | UEE21611; UEE21911; UEE22011; UEE22111; UEE30111; UEE30211; UEE30311; UEE30911; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEA102A | Select electronic components for assembly | 20 | 2 | E101A | UEE20911 | UEE21611; UEE21911; UEE22011; UEE22111; UEE30111; UEE30211; UEE30311; UEE30911; UEE40111; UEE40711; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEA103A | Set up and check electronic component assembly machines | 40 | 2 | A101A; A102A; E101A |  | UEE20911; UEE21911; UEE30111; UEE30311; UEE30911; UEE40711; UEE50511; UEE60211; UEE61711 |
| UEENEEA104A | Modify electronic sub assemblies | 40 | 2 | A101A; A102A; E101A; E102A and E103A or E104A |  | UEE20911; UEE21911; UEE30111; UEE30211; UEE30311; UEE30911; UEE40111; UEE40711; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEA105A | Conduct quality and functional tests on assembled electronic apparatus | 20 | 2 | A104A; A101A; A102A; E101A; E102A; and E103A or E104A |  | UEE20911; UEE21911; UEE30111; UEE30311; UEE30911; UEE40711; UEE50511; UEE60211; UEE61711 |
| UEENEEA106A | Use lead-free soldering techniques | 40 | 2 | E101A |  | UEE20911; UEE21911; UEE30211; UEE30311; UEE30911; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEA107A | Make up wiring looms for internal wiring of appliances and machinery | 40 | 2 | E101A |  | UEE21711 |
| UEENEEA110A | Assemble, mount and connect control gear and switchgear | 40 | 3 | G109A; E101A; E102A; E104A; E105A; E107A; G006A; G063A; G101A; G102A; G106A; | UEE30711 | UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE62111; UEE63011 |
| UEENEEA112A | Fabricate and assemble bus bars | 40 | 3 | E102A; E105A; E107A; E101A | UEE30711 | UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE62111; UEE63011 |
| UEENEEA113A | Mount and wire control panel equipment | 40 | 3 | G109A; E101A; E102A; E104A; E105A; E107A; G006A; G063A; G101A; G102A; G106A; | UEE30711 | UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE62111; UEE63011 |

### B - Broadcast units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEB101A | Operate and maintain amateur radio communication stations | 40 | 1 | E101A |  | UEE10111 UEE21911; UEE30911; UEE40711; UEE50511; UEE60211; UEE61711 |

### C - Commercial units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEC001B | Maintain documentation | 20 | 2 | None |  | 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; UEE50210 UEE50311; UEE50411; UEE50511; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE53011; UEE61111; UEE61711; UEE61811; UEE62011; UEE62111; UEE62411 |
| UEENEEC002B | Source and purchase material/parts for installation or service jobs | 20 | 3 | None |  | UEE10111; UEE20111; UEE20411; UEE20511; UEE20711; UEE20811; UEE20911; UEE21011; UEE21211; UEE21311; UEE21411; UEE21611; UEE21711; UEE21911; UEE30111; UEE30211; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE30911; UEE31011; UEE31111; UEE31211; UEE31411; UEE31511; UEE32011; UEE32111; UEE32211; UEE33011; UEE40111; UEE40211; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41511; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE42911; UEE43011; UEE43111; UEE43211; UEE50111; UEE50210 UEE50311; UEE50411; UEE50511; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE53011; UEE61111; UEE61711; UEE61811; UEE62011; UEE62111; UEE62411 |
| UEENEEC003B | Provide quotations for installation or service jobs | 20 | 3 | None |  | UEE30111; UEE30211; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE30911; UEE31011; UEE31111; UEE31211; UEE31411; UEE31511; UEE32011; UEE32111; UEE32211; UEE33011; UEE40111; UEE40211; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41511; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE42911; UEE43111; UEE43211; UEE50111; UEE50210 UEE50411; UEE50311; UEE50511; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE53011; UEE61111; UEE61711; UEE61811; UEE62011; UEE62111; UEE62411 |
| UEENEEC004B | Prepare specifications for the supply of materials and equipment for electrotechnology projects | 40 | 4 | None |  | UEE40111; UEE40711; UEE41511; UEE41611; UEE42011; UEE42111; UEE50111; UEE50511; UEE50711; UEE60211; UEE60411; UEE61711; UEE61811; UEE62011 |
| UEENEEC005B | Estimate electrotechnology projects | 40 | 4 | None |  | UEE40111; UEE40611; UEE40711; UEE40911; UEE41511; UEE41611; UEE42011; UEE42111; UEE42211; UEE42911; UEE43111; UEE50111; UEE50211; UEE50411; UEE50511; UEE50711; UEE50911; UEE51011; UEE51111; UEE51211; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 |
| UEENEEC006B | Prepare tender submissions for electrotechnology projects | 60 | 5 | C005B |  | UEE50111; UEE50411; UEE50511; UEE50711; UEE51011; UEE51111; UEE51211; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 |
| UEENEEC007B | Manage contract variations | 40 | 6 | None |  | UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 |
| UEENEEC008B | Receive and store materials and equipment for electrotechnology work | 20 | 2 | None |  | UEE10111; UEE20111; UEE20411; UEE20511; UEE20711; UEE20811; UEE20911; UEE21011; UEE21211; UEE21311; UEE21411; UEE21611; UEE21711; UEE21911 |
| UEENEEC009B | Provide quotations for inspection and compliance audit services | 80 | 4 | None |  | UEE40211; UEE42111 |
| UEENEEC010B | Deliver a service to customers | 20 | 2 | None |  | 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; UEE50210 UEE50311; UEE50411; UEE50511; UEE50711; UEE50911; UEE51011; UEE51111; UEE53011; UEE61111; UEE61711; UEE61811; UEE62011; UEE62111; UEE62411 |
| UEENEEC012B | Direct technical and non-technical enquiries to appropriate personnel | 20 | 2 | None |  | UEE20811 |
| UEENEEC013B | Participate in business equipment work and competency development activities | 120 | 3 | None | UEE30111 |  |
| UEENEEC014B | Participate in computer equipment work and competency development activities | 100 | 3 | None | UEE30211 |  |
| UEENEEC016B | Participate in voice and data communications work and competency development activities | 100 | 3 | None | UEE30411 |  |
| UEENEEC017B | Participate in appliance servicing work and competency development activities | 60 | 3 | None | UEE32111 |  |
| UEENEEC018B | Participate in electrical machine repair work and competency development activities | 60 | 3 | None | UEE30611 |  |
| UEENEEC019B | Participate in switchgear and controlgear work and competency development activities | 60 | 3 | None | UEE30711 |  |
| UEENEEC020B | Participate in electrical work and competency development activities | 60 | 3 | None | UEE30811; UEE33011 |  |
| UEENEEC021B | Participate in electronics and communications work and competency development activities | 60 | 3 | None | UEE30911; UEE32011 |  |
| UEENEEC022B | Participate in fire protection control work and competency development activities | 60 | 3 | None | UEE31011 |  |
| UEENEEC023B | Participate in gaming electronic work and competency development activities | 60 | 3 | None | UEE31111 |  |
| UEENEEC024B | Participate in instrumentation and control work and competency development activities | 60 | 3 | None | UEE31211 |  |
| UEENEEC025B | Participate in refrigeration and air conditioning work and competency development activities | 60 | 3 | None | UEE32211 |  |
| UEENEEC026B | Participate in security equipment work and competency development activities | 60 | 3 | None | UEE31411 |  |
| UEENEEC027B | Participate in rail communications and networks work and competency development activities | 60 | 3 | None | UEE31511 |  |

### D - Computerised Systems units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEED101A | Use computer applications relevant to a workplace | 20 | 1 | E101A | UEE10111 | UEE20511; UEE20911; UEE21011; UEE21211; UEE21311; UEE21611; UEE21711; UEE21911; UEE22011; UEE22111; UEE30111; UEE30211; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE30911; UEE31011; UEE31111; UEE31211; UEE31411; UEE32011; UEE32111; UEE32211; UEE33011; UEE40111; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41211; UEE41511; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE42911; UEE43011; UEE43111; UEE43211; UEE50111; UEE50311; UEE50411; UEE50511; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE53011; UEE61111; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62411 |
| UEENEED102A | Assemble, set-up and test computing devices | 80 | 2 | E101A | UEE20511; UEE30211; UEE40111; UEE61711; UEE61811 | UEE21211; UEE21911; UEE30111; UEE30311; UEE30411; UEE30911; UEE31111; UEE40211; UEE40711; UEE41511; UEE43211; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61111 |
| UEENEED103A | Evaluate and modify object oriented code programs | 40 | 4 | D101A; E101A |  | UEE40711; UEE41511; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61811 |
| UEENEED104A | Use engineering applications software on personal computers | 40 | 3 | E101A | UEE30211; UEE40111; UEE43211; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 | UEE30111; UEE30411; UEE30611; UEE30711; UEE30811; UEE30911; UEE31011; UEE31111; UEE31211; UEE31511; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41211; UEE41511; UEE41711; UEE41911; UEE42011; UEE42211; UEE43011; UEE43111; UEE50111; UEE50211; UEE50411; UEE50511; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60211; UEE60411 |
| UEENEED110A | Set up, create and implement content for a web server | 120 | 5 | E101A |  | UEE50111; UEE50511; UEE50911; UEE51011; UEE60211; UEE60411; UEE61511; UEE61711; UEE61811 |
| UEENEED111A | Develop, implement and test object oriented code | 140 | 5 | D101A; E101A |  | UEE30311; UEE50111; UEE50511; UEE50911; UEE51011; UEE60211; UEE60411; UEE61511; UEE61711; UEE61811 |
| UEENEED112A | Support computer hardware and software for engineering applications | 120 | 2 | D102A; E101A | UEE30211; UEE40111; UEE61811 | UEE30911; UEE40711; UEE41511; UEE50111 UEE50511; UEE50811; UEE60211; UEE60411; UEE61711 |
| UEENEED113A | Install and administer Unix based networked computers | 80 | 4 | E101A |  | UEE40111; UEE50111; UEE50811; UEE60411; UEE61711; UEE61811 |
| UEENEED114A | Design and manage enterprise computer networks | 80 | 6 | E101A |  | UEE60411; UEE61711; UEE61811 |
| UEENEED115A | Administer computer networks | 80 | 4 | D124A; E101A |  | UEE50111; UEE50811; UEE60411; UEE61711; UEE61811 |
| UEENEED116A | Develop computer network services | 120 | 4 | E101A |  | UEE50511; UEE50911; UEE51011; UEE60411; UEE61511; UEE61711; UEE61811 |
| UEENEED117A | Install and configure network systems for internetworking | 120 | 4 | E101A | UEE61811 | UEE40111; UEE43211; UEE50111; UEE50811; UEE60411; UEE61711 |
| UEENEED118A | Design and implement network systems for internetworking | 120 | 6 | E101A |  | UEE50111; UEE60411; UEE61711; UEE61811 |
| UEENEED119A | Design and implement advanced routing for internetworking systems | 100 | 6 | E101A |  | UEE60411; UEE61711; UEE61811 |
| UEENEED120A | Design and implement remote access for Internetworking systems | 100 | 6 | E101A |  | UEE60411; UEE61711; UEE61811 |
| UEENEED121A | Design and implement multi-layer switching for Internetworking systems | 100 | 6 | E101A |  | UEE60411; UEE61711; UEE61811 |
| UEENEED122A | Design and implement security for Internetworking systems | 100 | 6 | E101A |  | UEE60411; UEE61711; UEE61811 |
| UEENEED123A | Design and implement wireless LANs/WANs for internetworking systems | 100 | 6 | E101A |  | UEE60411; UEE61711; UEE61811 |
| UEENEED124A | Integrate multiple computer operating systems on a client server local area network | 80 | 4 | E101A |  | UEE40111; UEE50111; UEE50811; UEE60411; UEE61711; UEE61811 |
| UEENEED129A | Develop web pages for engineering applications | 40 | 3 | E101A |  | UEE30211; UEE30911; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEED130A | Select, install, configure and test multimedia components | 40 | 3 | D102A; E101A |  | UEE30211; UEE30311; UEE30911; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEED143A | Install and configure a client computer operating system and software | 40 | 2 | E101A | UEE30211; UEE40111 | UEE20511; UEE21911; UEE30111; UEE30311; UEE30911; UEE40711; UEE41511; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEED144A | Commission industrial computer systems | 20 | 5 | E101A | UEE50111; UEE60411 | UEE50911; UEE51011; UEE61511; UEE61711 |
| UEENEED145A | Modify-redesign of industrial computer systems | 20 | 5 | E101A | UEE50111; UEE60411 | UEE50911; UEE51011; UEE61511; UEE61711 |
| UEENEED146A | Set up and configure basic local area network (LAN) | 40 | 2 | D102A; E101A | UEE30211; UEE40111 | UEE20511; UEE21211; UEE21911; UEE30111; UEE30311; UEE30411; UEE30911; UEE31111; UEE40211; UEE40711; UEE41211; UEE41511; UEE43211; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61111; UEE61711; UEE61811 |
| UEENEED147A | Develop energy sector directory services | 80 | 5 | E101A |  | UEE50511; UEE60211; UEE60411; UEE62111; UEE61811; UEE62211; |
| UEENEED148A | Plan industrial computer systems projects | 60 | 6 | E101A |  | UEE60411; UEE61811 |
| UEENEED149A | Develop energy sector computer network applications infrastructure | 80 | 6 | E101A |  | UEE60211; UEE60411; UEE61811; UEE61111; UEE62211; |
| UEENEED150A | Develop industrial control programs for microcomputer equipped devices | 60 | 6 | E101A |  | UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811; UEE62211 |
| UEENEED151A | Provide programming solution for computer systems engineering problems | 60 | 6 | E101A |  | UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811; UEE62211 |
| UEENEED152A | Design embedded controller control systems | 80 | 6 | E101A |  | UEE51011; UEE60211; UEE60411; UEE61711; UEE61811; UEE62211 |
| UEENEED153A | Set up, configure and test biometric devices | 40 | 4 | D146A; D102A; E101A |  | UEE30211; UEE30911; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEED154A | Analyse and implement biometric measuring techniques and applications | 120 | 5 | D153A; D102A; D146A; E101A |  | UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEED155A | Develop and validate biometric equipment/systems installation | 120 | 5 | D154A; D102A; D146A; D153A; E101A |  | UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |

### E - Cross-Discipline units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEE006B | Apply methods to maintain currency of industry developments | 20 | 6 | None | UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE62211; UEE62311; UEE63011 | UEE43111 |
| UEENEEE009B | Comply with scheduled and preventative maintenance program processes | 20 | 3 | None |  | UEE30111; UEE30211; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE30911; UEE31011; UEE31111; UEE31211; UEE31411; UEE31511; UEE32011; UEE32111; UEE32211; UEE40111; UEE40211; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41511; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE43011; UEE43111; UEE43211; UEE50111; UEE50311; UEE50411; UEE50511; UEE50711; UEE50811; UEE50911; UEE51011; UEE53011; UEE61111 |
| UEENEEE011C | Manage risk in electrotechnology activities | 60 | 6 | None | UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE62111; UEE62211; UEE62511; UEE63011 | UEE60211; UEE60411 |
| UEENEEE012B | Manage electrotechnology projects | 40 | 6 | None |  | UEE60911 |
| UEENEEE013B | Plan electrotechnology projects | 60 | 6 | None |  | UEE60911 |
| UEENEEE015B | Develop design briefs for electrotechnology projects | 40 | 6 | None | UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 | UEE50111; UEE50511; UEE62511 |
| UEENEEE020B | Provide basic instruction in the use of electrotechnology apparatus | 20 | 2 | None |  | UEE10111; UEE20111; UEE20411; UEE20511; UEE20711; UEE20811; UEE20911; UEE21011; UEE21211; UEE21311; UEE21411; UEE21711; UEE21911; UEE22011; UEE22111; UEE30111; UEE30211; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE30911; UEE31011; UEE31111; UEE31211; UEE31411; UEE31511; UEE32011; UEE32111; UEE32211; UEE33011; UEE40111; UEE40211; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41511; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42811; UEE42911; UEE43011; UEE43111; UEE50111; UEE50311; UEE50411; UEE50511; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE53011; UEE61111; UEE61711; UEE61811; UEE62011; UEE62111; UEE62411 |
| UEENEEE038B | Participate in development and follow a personal competency development plan | 20 | 2 | None | UEE20111; UEE20411; UEE20511; UEE20711; UEE20811; UEE20911; UEE21011; UEE21211; UEE21311; UEE21411; UEE21611; UEE21711; UEE21911; 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; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60211; UEE60411; UEE61711; UEE61811 |  |
| UEENEEE070B | Write specifications for computer systems engineering projects | 40 | 5 | None |  | UEE50111; UEE50511; UEE60411; UEE61711; UEE61811 |
| UEENEEE071B | Write specifications for electrical engineering projects | 40 | 5 | None | UEE53011; UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 |  |
| UEENEEE072B | Write specifications for electronics and communications engineering projects | 40 | 5 | None |  | UEE50511; UEE60211 |
| UEENEEE073B | Write specifications for refrigeration and air conditioning engineering projects | 40 | 5 | None |  |  |
| UEENEEE074B | Write specifications for renewable energy engineering projects | 40 | 5 | None | UEE50711; UEE60911; UEE62011 |  |
| UEENEEE075B | Write specifications for industrial electronics and control projects | 40 | 5 | None | UEE50911; UEE51011; UEE60611; UEE61511 | UEE50511 |
| UEENEEE077B | Write specifications for automated systems projects | 40 | 5 | None | UEE61111 |  |
| UEENEEE078B | Contribute to risk management in electrotechnology systems | 20 | 6 | None | UEE60211; UEE60411 | UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE62111; UEE63011 |
| UEENEEE080A | Apply industry and community standards to engineering activities | 20 | 6 | E101A | UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 |  |
| UEENEEE081A | Apply material science to solving electrotechnology engineering problems | 60 | 6 | E101A | UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 |  |
| UEENEEE082A | Apply physics to solving electrotechnology engineering problems | 60 | 6 | E101A | UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 |  |
| UEENEEE083A | Establish and follow a competency development plan in an electrotechnology engineering discipline | 120 | 6 | None | UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 |  |
| UEENEEE084A | Write specifications for electrotechnology engineering projects | 40 | 5 | None | UEE50311; UEE50411; UEE50811 |  |
| UEENEEE101A | Apply Occupational Health and Safety regulations, codes and practices in the workplace | 20 | 1 | None | 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; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 |  |
| UEENEEE102A | Fabricate, assemble and dismantle utilities industry components | 40 | 1 | E101A | UEE20111; UEE20411; UEE20511; UEE20711; UEE20911; UEE21011; UEE21211; UEE21311; UEE21411; UEE21611; UEE21711; UEE21911; UEE22011; 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; UEE50211; UEE50411; UEE50711; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 | UEE10111; UEE20811; UEE22111; UEE50111; UEE50511; UEE60211; UEE60411 |
| UEENEEE103A | Solve problems in ELV single path circuits | 40 | 2 | E101A | UEE20811; UEE20911; UEE21411; UEE30211; UEE30311; UEE30911; UEE32111; UEE32211; UEE40111; UEE42711; UEE42811; UEE42911; UEE51211; UEE62511 | UEE10111; UEE50111; UEE50511; UEE60211; UEE60411 |
| UEENEEE104A | Solve problems in d.c. circuits | 80 | 2 | E101A | UEE20711; UEE21911; UEE22011; UEE22111; UEE30111; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE30911; UEE31011; UEE31111; UEE31211; UEE31411; UEE31511; UEE32011; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41511; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE43011; UEE43111; UEE43211; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE51011; UEE53011; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 | UEE20411; UEE20511; UEE21011; UEE21211; UEE21611; UEE21711; UEE30211; UEE40111; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61811 |
| UEENEEE105A | Fix and secure electrotechnology equipment | 20 | 1 | E101A | UEE20111; UEE20711; UEE21011; UEE21211; UEE30111; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE31011; UEE31111; UEE31211; UEE31411; UEE32011; UEE32111; UEE32211; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41611; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE42911; UEE43011; UEE43111; UEE43211; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE51011; UEE51211; UEE53011; UEE60611; UEE60911; UEE61211; UEE61511; UEE62011; UEE62211; UEE62311; UEE62511; UEE63011 | UEE10111; UEE20411; UEE20511; UEE20811; UEE20911; UEE21311; UEE21611; UEE21711; UEE21911; UEE22011; UEE22111; UEE30211; UEE30911; UEE31111; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811; UEE62111 |
| UEENEEE107A | Use drawings, diagrams, schedules, standards, codes and specifications | 40 | 2 | E101A | UEE20111; UEE20411; UEE20711; UEE21011; UEE21211; UEE21611; UEE21711; UEE30111; UEE30311; UEE30411; UEE30611; UEE30711; UEE30811; UEE31011; UEE31111; UEE31211; UEE31411; UEE31511; UEE32011; UEE32111; UEE32211; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41611; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE42911; UEE43011; UEE43111; UEE43211; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 | UEE20511; UEE20811; UEE20911; UEE21311; UEE21411; UEE21911; UEE30211; UEE30911; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411 |
| UEENEEE108A | Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits | 40 | 2 | E101A; E102; E105A; E107A; | UEE30311; UEE30411; UEE31011; UEE31411; UEE32011; UEE41611; UEE62011 | UEE20511; UEE20711; UEE20911; UEE21011; UEE21211; UEE21311; UEE21611; UEE21711; UEE21911; UEE30111; UEE30211; UEE30911; UEE31111; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEE110A | Develop and implement energy sector maintenance programs | 60 | 5 | None |  | UEE40111; UEE40711; UEE42711; UEE42811; UEE43111; UEE50111; UEE50311; UEE50411; UEE50511; UEE51211; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61811; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEE114A | Supervise and coordinate energy sector work activities | 40 | 4 | None |  | UEE40111; UEE40211; UEE40511; UEE40711; UEE41511; UEE41611; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61811; UEE62011 |
| UEENEEE117A | Implement and monitor energy sector OHS policies and procedures | 20 | 4 | None | UEE40111; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41511; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE43011; UEE43111; UEE43211; UEE50111; UEE50211; UEE50311; UEE50411; UEE50511; UEE50711; UEE50811; UEE50911; UEE51011; UEE51211; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62511; UEE63011 | UEE41611 |
| UEENEEE118A | Establish, maintain and evaluate energy sector OHS systems | 60 | 5 | None |  | UEE50511; UEE50811; UEE60211 |
| UEENEEE119A | Solve problems in multiple path extra low voltage (ELV) a.c. circuits | 40 | 3 | E101A; E104A; | UEE31011; UEE31211; UEE32011; UEE41611; UEE42211; UEE51011; UEE61111; UEE61511 | UEE30211; UEE30311; UEE40111; UEE50111; UEE50811; UEE60411 |
| UEENEEE121A | Plan an integrated cabling installation system | 40 | 3 | E108A or G106A; E101A; E102A; E105A; E107A |  | UEE30311; UEE30411; UEE30811; UEE30911; UEE40211; UEE40611; UEE40711; UEE41011; UEE41511; UEE50511; UEE60211; UEE61711; UEE62111 |
| UEENEEE122A | Carry out preparatory energy sector work activities | 60 | 2 | E101A; E102A; E105A; |  | UEE20411; UEE20811; UEE21311; UEE21711; UEE21911; UEE22011; UEE22111; UEE30111; UEE30311; UEE30911; UEE40711; UEE50511; UEE50811; UEE60211; UEE61711 |
| UEENEEE123A | Solve basic problems electronic and digital equipment and circuits | 80 | 2 | E101A; E104A; |  | UEE21211; UEE21911; UEE30211; UEE30311; UEE30911; UEE31111; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEE124A | Compile and produce an energy sector detailed report | 60 | 4 | None | UEE40111; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41511; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42611; UEE42711; UEE42811; UEE42911; UEE43011; UEE43111; UEE43211; UEE50211; UEE50311; UEE50411; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 | UEE41211; UEE41611; UEE50111; UEE50511; UEE60211; UEE60411 |
| UEENEEE125A | Provide engineering solutions for problems in complex multiple path circuits | 60 | 5 | E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A | UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 | UEE50111; UEE50411; UEE50511; UEE60211; UEE60411 |
| UEENEEE126A | Provide solutions to basic engineering computational problems | 60 | 5 | E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A | UEE51111; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE63011 | UEE50111; UEE50411; UEE50511; UEE50811; UEE51211; UEE60211; UEE60411; UEE62511 |
| 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 | UEE62411 | UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62111; UEE62211; UEE62311; UEE63011 |
| 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 |  | UEE60211; UEE60411; UEE60611; UEE61111; UEE61511; UEE61711; UEE61811; UEE62111; UEE63011 |
| UEENEEE129A | Solve electrotechnical engineering problems | 60 | 6 | None | UEE62411 | UEE60211; UEE60411 |
| UEENEEE130A | Provide solutions and report on routine electrotechnology problems | 60 | 2 | None |  | UEE22011; UEE22111; UEE50811 |
| UEENEEE131A | Solve problems in ELV circuits for non electrical workers | 40 | 2 | E101A |  | UEE21311 |
| UEENEEE137A | Document and apply measures to control OHS risks associated with electrotechnology work | 20 | 2 | E101A | UEE20111; UEE20411; UEE20511; UEE20711; UEE20811; UEE20911; UEE21011; UEE21211; UEE21311; UEE21411; UEE21611; UEE21711; UEE21911; UEE30111; UEE30211; UEE30311; UEE30411; UEE30611; UEE30711; 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; UEE50711; UEE50811; UEE50911; UEE51011; UEE51111; UEE51211; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 |  |
| UEENEEE141A | Use of routine equipment/plant/technologies in an energy sector environment | 40 | 1 | E101A | UEE22011 | UEE21911; UEE30311; UEE30911; UEE50511; UEE60211 |
| UEENEEE142A | Produce products for carrying out energy sector work activities | 40 | 1 | E101A; E102A |  |  |
| 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 |  | UEE20811 |
| UEENEEE145A | Apply computation when using equipment/materials/concepts in an energy sector environment | 120 | 6 | None |  | UEE21911 |
| UEENEEE146A | Identify effects of energy on machinery and materials in an energy sector environment | 120 | 6 | None | UEE62411 | UEE30211; UEE30911; UEE50111; UEE50511; UEE60211; UEE60411 |
| UEENEEE147A | Identify building techniques, methods and materials used in energy sector work activities | 40 | 2 | E101A | UEE20811; UEE51111 | UEE50811 |
| UEENEEE148A | Carry out routine work activities in an energy sector environment | 40 | 1 | E101A | UEE10111; UEE22011 | UEE20811; UEE22111; UEE30211; UEE30311; UEE30911; UEE50111; UEE50511; UEE60211; UEE60411 |
| UEENEEE149A | Contribute to the operation of support plant and equipment used in electricity supply industry | 40 | 2 | E101A |  | UEE50811 |
| UEENEEE150A | Undertake computations in an energy sector environment | 120 | 6 | None |  | UEE30211; UEE30911; UEE50111; UEE50511; UEE60211; UEE60411; UEE62411 |
| UEENEEE151A | Transport apparatus, equipment and materials | 60 | 2 | None |  | UEE21311; UEE50811 |
| 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 |  | UEE50511; UEE60211; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62111; UEE63011 |
| UEENEEE161A | Analyse static and dynamic parameters of electrical equipment | 80 | 6 | E101A |  | UEE60611; UEE61111; UEE61211; UEE61511; UEE61711; UEE62111; UEE63011 |
| UEENEEE162A | Select drive components for electrical equipment design | 80 | 6 | E161A; E101A |  | UEE60611; UEE61111; UEE61211; UEE61511; UEE62111; UEE63011 |
| UEENEEE163A | Analyse materials for suitability in electrical equipment | 80 | 6 | E161A; E101A |  | UEE50511; UEE60211; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE62111; UEE63011 |
| UEENEEE164A | Design electrical machine drives and production layout plans | 80 | 6 | E162A; E163A; E126A; E101A; E161A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A |  | UEE60611; UEE61111; UEE61211; UEE61511; UEE62111; UEE63011 |
| UEENEEE179A | Identify and select components, accessories and materials for energy sector work activities | 20 | 3 | E101A; E148A | UEE10111; UEE22011 | UEE20511; UEE20811; UEE20911; UEE21211; UEE21911; UEE22111; UEE30211; UEE30311; UEE30911; UEE31111; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| 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 | ; | UEE31211 UEE31811 UEE40411 UEE50211; UEE31211; UEE31811; UEE31211 UEE31811 UEE40411 UEE50211; UEE41611; UEE42011; UEE50211; UEE50811; UEE60611; UEE60911; UEE61111; UEE61511; UEE62011; UEE62111 |
| UEENEEE191A | Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software | 60 | 3 | E190A; E104A; E101A; D104A; E102A; E107A |  | UEE31211 UEE31811 UEE40411 UEE50211 UEE31211; UEE31811; UEE31211 UEE31811 UEE40411 UEE50211; UEE41611; UEE42011; UEE50211; UEE50811; UEE60611; UEE61111; UEE61511; UEE62011; UEE62111 |
| UEENEEE192A | Produce detailed electrotechnology /utilities drawings using computer aided design equipment and software | 60 | 4 | E191A; E190A; E104A; D104A; E102A; E107A |  | UEE40411 UEE50211 UEE40411; UEE50211; UEE40211; UEE41611; UEE42011; UEE50211; UEE50811; UEE60611; UEE60911; UEE61111; UEE61511; UEE62011 |

### F - Data and Voice units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| 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 | UEE20711; UEE30411; UEE31011; UEE20707UEE40211; UEE20707 | UEE30211; UEE30311; UEE30811; UEE30911; UEE31411; UEE31511; UEE33011; UEE40111; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41511; UEE41711; UEE43011; UEE43111; UEE50111; UEE50411; UEE50511; UEE53011; UEE60211; UEE60411; UEE61111; UEE61711; UEE61811; UEE62111 |
| 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; |  | UEE41111 |
| UEENEEF104A | Install and modify performance data communication copper cabling | 40 | 3 | F102A; E101A; E102A; E104A; E105A; E107A | UEE30407UEE30411; UEE30407UEE40211; UEE30407 | UEE30211; UEE30811; UEE30911; UEE31011; UEE31511; UEE33011; UEE40111; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41511; UEE41711; UEE43011; UEE50111; UEE50411; UEE50511; UEE53011; UEE60211; UEE60411; UEE61111; UEE61711; UEE61811; UEE62111 |
| UEENEEF105A | Install and modify optical fibre performance data communication cabling | 40 | 3 | F102A; E102A; E104A; E105A; E107A; E101A | UEE30407UEE30411; UEE30407UEE30407 | UEE30211; UEE30911; UEE31011; UEE31511; UEE40111; UEE40211; UEE40711; UEE40811; UEE41511; UEE41711; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEF106A | Solve problems in voice and data communications circuits | 40 | 2 | E101A |  | UEE21911 UEE30911; UEE21910UEE40211; UEE40711; UEE41511 UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEF107A | Set up and configure the wireless capabilities of communications and data storage devices | 40 | 2 | E101A |  | UEE21911; UEE20711 UEE30211; UEE30411; UEE30911; UEE31511; UEE40111; UEE40211; UEE40711; UEE41511; UEE41711 UEE50511; UEE50111; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEF108A | Select and arrange equipment for wireless communication networks | 40 | 3 | E101A |  | UEE30211; UEE30411; UEE30911; UEE31511; UEE40111; UEE40211; UEE40711; UEE41511; UEE41711; UEE43211 UEE50111; UEE60211; UEE60411; UEE61111; UEE61711; UEE61811 |
| UEENEEF109A | Install and connect data and voice communication equipment | 40 | 3 | F104A; F105A; F102A; E102A; E104A; E105A; E107A; E101A | UEE30407UEE30411; UEE30407UEE30407 | UEE30211; UEE30911; UEE31511; UEE40111; UEE40211; UEE40711; UEE41511; UEE41711; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEF110A | Select and arrange data and voice equipment for local area networks | 40 | 3 | F104A; F105A; F102A; E102A; E104A; E105A; E107A; E101A | UEE30407UEE30411; UEE30407UEE30407 | UEE30211; UEE30911; UEE31511; UEE40111; UEE40211; UEE40711; UEE41511; UEE41711; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEF111A | Test, report and rectify faults in data and voice installations | 40 | 3 | F104A; F105A; F102A; E102A; E104A; E105A; E107A; E101A | UEE30407UEE30411; UEE30407UEE30407 | UEE30911; UEE40211; UEE40711; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEF112A | Install aerial telecommunication cables | 40 | 3 | F102A; E102A; E104A; E105A; E107A; E101A |  | UEE30411; UEE40211 |
| UEENEEF113A | Install underground communication cables | 40 | 3 | F102A; E102A; E104A; E105A; E107A; E101A |  | UEE30411; UEE40211 |
| UEENEEF114A | Set up and configure basic data communication systems | 40 | 3 | D102A; E101A |  | UEE30411; UEE30911; UEE40211; UEE40711; UEE41511 UEE50511; UEE60211; UEE61711 |
| UEENEEF115A | Assemble and connect telecommunication frames and cabinets | 60 | 2 | E102A; E105A; E107A; E101A |  | UEE30711; UEE30411; UEE30711; UEE33011; UEE30711; UEE40211; UEE43011; UEE53011 |

### G - Electrical units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEG006A | Solve problems in single and three phase low voltage machines | 80 | 3 | E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A | UEE30611; UEE30711; UEE30811; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42011; UEE42111; UEE42611; UEE43011; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60611; UEE60911; UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 | UEE61111 |
| UEENEEG033A | Solve problems in single and three phase low voltage electrical apparatus and circuits | 60 | 3 | E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A | UEE30811; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42011; UEE42111; UEE42611; UEE43011; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60611; UEE60911; UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 |  |
| UEENEEG063A | Arrange circuits, control and protection for general electrical installations | 40 | 3 | E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A; | UEE30711; UEE30811; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42011; UEE42111; UEE42611; UEE43011; UEE43111; UEE50211; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60611; UEE60911; UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 |  |
| 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; |  | UEE40611; UEE41011; UEE41911; UEE42011; UEE42111; UEE43111; UEE50311; UEE50411; UEE60911; UEE62211 |
| UEENEEG101A | Solve problems in electromagnetic devices and related circuits | 60 | 3 | E104A: E101A | UEE30611; UEE30711; UEE30811; UEE32011; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41611; UEE41911; UEE42011; UEE42111; UEE42611; UEE43011; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60611; UEE60911; UEE61211; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 | UEE43211; UEE61111 |
| UEENEEG102A | Solve problems in low voltage a.c. circuits | 80 | 3 | E101A; E104A; G101A; | UEE30611; UEE30711; UEE30811; UEE33011; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42011; UEE42111; UEE42611; UEE43011; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60611; UEE60911; UEE61211; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 | UEE43211; UEE61111 |
| UEENEEG103A | Install low voltage wiring and accessories | 20 | 3 | E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G106A; G107A; 108A; G109A; | UEE30811; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41911; UEE42011; UEE42111; UEE42611; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE60611; UEE60911; UEE61211; UEE62211; UEE62311 |  |
| 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; | UEE30811; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42011; UEE42611; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE60611; UEE60911; UEE61211; UEE62211; UEE62311 |  |
| 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; | UEE30811; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42111; UEE42611; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE60611; UEE60911; UEE61211; UEE62211; UEE62311 |  |
| UEENEEG106A | Terminate cables, cords and accessories for low voltage circuits | 40 | 3 | E101A; E102A; E105A; E107B | UEE30611; UEE30811; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42011; UEE42111; UEE42611; UEE43011; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60611; UEE60911; UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 | UEE43211; UEE61111 |
| 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 | UEE30811; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42011; UEE42111; UEE42611; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60611; UEE60911; UEE61211; UEE62111; UEE62211; UEE62311 | UEE63011 |
| 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; | UEE30811; UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42011; UEE42111; UEE42611; UEE43011; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60611; UEE60911; UEE61211; UEE62211; UEE62311; UEE63011 |  |
| UEENEEG109A | Develop and connect electrical control circuits | 80 | 3 | E101A; E102A; E104A; E105A; E107A; G006A; G063A; G101A; G102A; G106A; | UEE33011; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41911; UEE42011; UEE42111; UEE42611; UEE43011; UEE43111; UEE50211; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60611; UEE60911; UEE61211; UEE62211; UEE62311; UEE63011 |  |
| 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; |  | UEE30811; UEE33011; UEE40611; UEE40911; UEE41111; UEE43011; UEE50411; UEE50911; UEE53011; UEE60611; UEE63011 |
| UEENEEG111A | Carry out basic repairs to electrical components and equipment | 40 | 2 | E102A; E101A | UEE21711; UEE30611; UEE30711; UEE21711; UEE21711 | UEE20411; UEE30811; UEE33011; UEE40611; UEE43011; UEE43211; UEE50411; UEE50911; UEE53011; UEE60611; UEE61111; UEE62111; UEE63011 |
| 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; |  | UEE30811; UEE40311; UEE40611; UEE40811; UEE41011; UEE42111; UEE50411; UEE50911 |
| UEENEEG116A | Diagnose and rectify faults in traction lift systems | 80 | 3 | G108A;  E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; | UEE41111 | UEE30811; UEE33011; UEE40311; UEE40611; UEE43011; UEE50411; UEE50911; UEE53011; UEE60611; UEE63011 |
| UEENEEG118A | Maintain operation of electrical mining equipment and systems | 60 | 3 | G102A; G108A;  E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G106A; |  | UEE30811; UEE33011; UEE40311; UEE40411; UEE40611; UEE40911; UEE43011; UEE50211; UEE50411; UEE50911; UEE53011; UEE60611; UEE63011 |
| UEENEEG119A | Maintain operation of electrical marine equipment and systems | 60 | 3 | G102A; G108A;  E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G106A |  | UEE30811; UEE33011; UEE40311; UEE40411; UEE40611; UEE40911; UEE43011; UEE50211; UEE50411; UEE50911; UEE53011; UEE60611; UEE63011 |
| UEENEEG120A | Select and arrange equipment for special LV electrical installations | 60 | 3 | G107A;  E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A |  | UEE30811; UEE40311; UEE40611; UEE42111; UEE50411; UEE62111; UEE63011 |
| UEENEEG121A | 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; G107A; G108A; G109A; |  | UEE40311; UEE40611; UEE40811; UEE41011; UEE42011; UEE42111; UEE50411; UEE62211; UEE62311 |
| 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; | UEE40311 | UEE40511; UEE40611; UEE40811; UEE41011; UEE42011; UEE42111; UEE50411; UEE62211; UEE62311 |
| 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 | UEE40311 | UEE40511; UEE40611; UEE40811; UEE41011; UEE42011; UEE42111; UEE50411; UEE62211; UEE62311 |
| 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 |  | UEE40311; UEE40611; UEE40811; UEE41011; UEE42011; UEE42111; UEE50411; UEE62211; UEE62311 |
| 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 |  | UEE40311; UEE40611; UEE41011; UEE42011; UEE42111; UEE50411; UEE60911; UEE62111; UEE62211; UEE62311; UEE63011 |
| 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 |  | UEE30811; UEE40311; UEE40611; UEE50411 |
| 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 |  | UEE50411; UEE53011; UEE60911; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEG128A | Plan low voltage switchboard and control panel layouts | 40 | 4 | G107A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A |  | UEE40311; UEE40611; UEE41011; UEE42111; UEE43011; UEE50411; UEE53011; UEE60911; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEG129A | Overhaul and repair major switchgear and controlgear | 60 | 3 | G164A;  E102A; E105A; E107A |  | UEE30611; UEE30711; UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE50911; UEE53011; UEE63011 |
| UEENEEG130A | Design switchboards rated for high fault levels (greater than 400 A) | 60 | 6 | G128A; G107A; E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; G149A; E125A; E126A; E029B or G102A or H114B, E104A; or H169B;E103A  G102A; E101A; E104A; G101A; |  | UEE60911; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEG131A | Evaluate performance of low voltage electrical apparatus | 40 | 5 | E101A |  | UEE50311; UEE50411; UEE50711; UEE50811; UEE50911; UEE51011; UEE53011; UEE60611; UEE61111; UEE61211; UEE61511; UEE62111; UEE62211; UEE62311; UEE63011 |
| 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; |  | UEE40311; UEE40611; UEE40911; UEE42111; UEE50411; UEE50911; UEE60611; UEE60911; UEE62211; UEE62311 |
| 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 |  | UEE60611; UEE61111; UEE61211; UEE62111; UEE63011 |
| UEENEEG144A | Develop engineering solutions for d.c. machine and control problems | 60 | 6 | E126A; E129B; or G102A; E101; E104A; G101A or H114B; E101A and E104A or H169A |  | UEE60611; UEE61111; UEE61211; UEE62111; UEE63011 |
| 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 |  | UEE60611; UEE61111; UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 |
| 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 | UEE60611; UEE60911; UEE61211; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 | UEE50411; UEE53011; UEE61111 |
| UEENEEG150A | Wind electrical coils | 40 | 2 | E101A; E102A; E107A; | UEE20411; UEE30611 | UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEG151A | Place and connect electrical coils | 40 | 2 | E104A; G150A;  E101A; E102A; E107A | UEE30611 | UEE20411; UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEG152A | Rewind single phase machines | 40 | 3 | G151A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A; G150A |  | UEE30611; UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEG153A | Rewind three phase low voltage induction machines | 60 | 3 | G151A; G006A; E101A; E102A; E104A; E105A; E107A; G101A; G102A; G106A; G150A | UEE30611 | UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEG154A | Rewind LV direct current machines | 60 | 3 | G151A; G101A; E101A; E102A; E104A; E107A; G150A |  | UEE30611; UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEG155A | Rewind HV three phase induction machines rated for voltages to 3.3 kV | 60 | 4 | G153A; E101A; E102A; E104A; E107A; G150A |  | UEE40611; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEG156A | Rewind HV three phase induction machines rated for voltages above 3.3 kV | 60 | 4 | G155A; E101A; E102A; E104A; E107A; G150A; G153A |  | UEE40611; UEE43011; UEE50411; UEE53011; UEE63011 |
| 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 | UEE30611 | UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE62211; UEE62311; UEE63011 |
| 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 |  | UEE40611; UEE43011; UEE50411; UEE53011; UEE62211; UEE62311; UEE63011 |
| 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 |  | UEE30611; UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE62211; UEE62311; UEE63011 |
| 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  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 |  | UEE60611; UEE61111; UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 |
| 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 H169A |  | UEE60611; UEE61111; UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 |
| 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; |  | UEE40311; UEE40611; UEE41011; UEE42111; UEE50411; UEE60611; UEE60911; UEE63011 |
| UEENEEG164A | Repair and maintain mechanical components of electrical machines | 40 | 3 | G111A; E102A; E105A; E107A; E101A | UEE30611 | UEE30711; UEE30811; UEE33011; UEE40611; UEE43011; UEE43211; UEE50411; UEE53011; UEE61111; UEE63011 |
| UEENEEG165A | Maintain and service traction lifts systems and equipment | 40 | 3 | G116A;  E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; G108A; |  | UEE30811; UEE33011; UEE40611; UEE41111; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEG166A | Install and maintain escalators, moving walks and treadways | 40 | 3 | G116A;  E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; G108A; |  | UEE30811; UEE33011; UEE40611; UEE41111; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEG167A | Align and install traction lift equipment | 20 | 3 | G116A;  E101A; E102A; E104A; E105A; E107A; G006A; G033A; G063A; G101A; G102A; G106A; G108A; |  | UEE30811; UEE33011; UEE40611; UEE41111; UEE43011; UEE50411; UEE53011; UEE63011 |
| 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 | UEE41111 | UEE40311; UEE40611; UEE41011; UEE43011; UEE50411; UEE53011; UEE60611; UEE63011 |
| UEENEEG169A | Manage large electrical projects | 40 | 6 | E101A | UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 |  |
| UEENEEG170A | Plan large electrical projects | 60 | 6 | E101A | UEE61211; UEE62111; UEE62211; UEE62311; UEE63011 |  |
| 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; | UEE42011 | UEE30811; UEE40311; UEE41011; UEE41911; UEE42111; UEE43111; UEE50311; UEE50411; UEE50711; UEE60911; UEE62211; UEE63011 |
| UEENEEG172A | Investigate and report on electrical incidents and causes | 60 | 4 | G105A; G122A; G123A E101A; E102A; E104A; E105A; E107A; E137A; G006A; G033A; G063A; G101A; G102A; G103A; G104A; G106A; G107A; G108A; G109A;G108A; G109A; |  | UEE40311; UEE40611; UEE40811; UEE41011; UEE42011; UEE42111; UEE50411; UEE62211; UEE62311; UEE63011 |
| UEENEEG175A | Develop compliance policies and plans to conduct a electrical contracting business | 80 | 4 | E101A | UEE42011 | UEE40311; UEE40611; UEE40811; UEE41011; UEE42111; UEE50411; UEE50711; UEE60911; UEE63011 |
| 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; |  | UEE40611; UEE41011; UEE42111; UEE50411; UEE60611; UEE60911 |
| UEENEEG179A | Develop detailed electrical drawings | 60 | 4 | E192A; D104A; E101A; E102A; E104A; E107A; E190A; E191A; | UEE40411 UEE50211; UEE40411; UEE50211; UEE40411 UEE50211; UEE40411 | UEE40611; UEE40811; UEE40911; UEE41011; UEE41011; UEE42011; UEE42111; UEE43011; UEE50211; UEE50411; UEE50911; UEE53011; UEE60611; UEE60911; UEE61111; UEE62111; UEE63011 |
| UEENEEG180A | Develop detailed and complex drawings for electrical systems using CAD systems | 60 | 5 | G179A; D104A; E101A; E102A; E104A; E107A; E190A; E191A; E192A |  | UEE50211; UEE50411; UEE50911; UEE51011; UEE53011; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE62011; UEE62111; UEE63011 |
| UEENEEG181A | Provide advice on effective and energy efficient lighting products | 20 | 3 | None |  | UEE30811; UEE33011; UEE40611; UEE41011; UEE42111; UEE43011; UEE43111; UEE50411; UEE53011; UEE61111; UEE62111; UEE63011 |
| UEENEEG182A | Supply effective and efficient lighting products for domestic and small commercial applications | 40 | 3 | G181A |  | UEE30811; UEE33011; UEE40611; UEE41011; UEE42111; UEE43011; UEE43111; UEE50411; UEE53011; UEE61111; UEE62111; UEE63011 |
| UEENEEG183A | Provide advice on the application of energy efficient lighting for ambient and aesthetic effect | 20 | 3 | G182A; G181A |  | UEE30811; UEE33011; UEE40611; UEE41011; UEE42111; UEE43011; UEE50411; UEE53011; UEE61111; UEE62111; UEE63011 |
| UEENEEG184A | Provide photometric data for illumination system design | 60 | 4 | None |  | UEE40611; UEE41011; UEE42111; UEE43111; UEE50411; UEE62111; UEE63011 |
| UEENEEG185A | Select effective and efficient light sources and luminaries for given locations and designs | 60 | 4 | G184A |  | UEE40611; UEE41011; UEE42111; UEE43111; UEE50411; UEE62111; UEE63011 |
| UEENEEG186A | Design effective and efficient lighting for residential and commercial buildings | 20 | 4 | G185A; G184A |  | UEE40611; UEE41011; UEE42111; UEE43111; UEE62111; UEE63011 |
| UEENEEG187A | Design effective and efficient lighting for public, open and sports areas | 20 | 5 | G185A; G184A |  | UEE50411; UEE53011; UEE60911; UEE62111; UEE63011 |
| UEENEEG188A | Prepare quotations for the supply of effective and efficient lighting products for lighting projects | 20 | 4 | G185A; G184A |  | UEE40611; UEE41011; UEE42111; UEE50411; UEE62111; UEE63011 |
| 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; |  | UEE30811; UEE40611; UEE41011; UEE42111; UEE50411; UEE63011 |
| UEENEEG197A | Apply currency of safe working practices and compliance verification of electrical installations | 20 | 4 | Unrestricted Electrician’s Licence |  | Skill Sets only |
| UEENEEG198A | Apply compliance requirements to all aspects of electrical work | 20 | 4 | Unrestricted Electrician’s Licence |  | Skill Sets only |
| 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; | UEE31211; UEE31211; UEE33011; UEE31211; UEE43011; UEE31211; UEE53011; UEE63011 |  |

### H - Electronic units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEH101A | Repair basic computer equipment faults by replacement of modules/sub-assemblies | 40 | 2 | E102A; E107A and E104A; or E123A; E101 |  | UEE20411; UEE20511; UEE20711; UEE21911; UEE22011; UEE22111; UEE30211; UEE30311; UEE30911; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEH102A | Repairs basic electronic apparatus faults by replacement of components | 40 | 2 | E102A; E101A | UEE21911; UEE30111; UEE30911; UEE31011; UEE31111; UEE31511; UEE40711; UEE41511; UEE61711 | UEE20511; UEE20911; UEE21011; UEE21211; UEE21611; UEE22011; UEE22111; UEE30211; UEE30711; UEE30811; UEE31211; UEE31411; UEE33011; UEE40111; UEE40411; UEE40611; UEE40811; UEE40911; UEE41011; UEE41711; UEE42211; UEE43011; UEE50111; UEE50211; UEE50411; UEE50511; UEE50711; UEE50911; UEE51011; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61511; UEE62111; UEE63011 |
| UEENEEH103A | Repair routine business equipment faults | 120 | 2 | E102A; E105A; E107A; E101A | UEE30111 | UEE21911; UEE30211; UEE30311; UEE30911; UEE31411; UEE40111; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEH104A | Set up and test residential video/audio equipment | 40 | 2 | E101A; | UEE30311 | UEE21211; UEE21911; UEE30911; UEE31411; UEE40711; UEE40811; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEH105A | Verify functionality and compliance of custom electronic installations | 40 | 3 | H106A; E108A; E102A; E105A; E107A; E101A | UEE30311 | UEE30911; UEE40711; UEE40811; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEH106A | Assemble and set up fixed video/audio components and systems in buildings and premises | 120 | 2 | E108A; E102A; E105A; E107A; E101A | UEE30311 | UEE30911; UEE40711; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEH107A | Repair predictable faults in general electronic apparatus | 40 | 3 | H112A; H113A; H138; E101A; E102A; H102A; H111A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A; |  | UEE30111; UEE30311; UEE30911; UEE31111; UEE40711; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEH108A | Assemble and install reception antennae and signal distribution equipment | 60 | 2 | E102A; E105A; E107A; E101A | UEE21211 | UEE21911; UEE30311; UEE30911; UEE40711; UEE41511; UEE50511; UEE60211 |
| UEENEEH109A | Set up and test gaming and game equipment | 60 | 2 | E101A | UEE31111 | UEE21911; UEE30311; UEE30911; UEE40711; UEE41511; UEE50511; UEE60211 |
| UEENEEH110A | Install commercial video/audio system components | 120 | 2 | E102A; E105A; E107A; E108A; E101A |  | UEE30311; UEE30911; UEE40711; UEE41511; UEE50511; UEE60211 |
| UEENEEH111A | Troubleshoot single phase input d.c. power supplies | 40 | 3 | H102A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A; | UEE30111; UEE30911; UEE31111; UEE31511; UEE40711; UEE41511; UEE41711; UEE61711 | UEE30211; UEE30711; UEE30811; UEE31011; UEE31211; UEE33011; UEE40111; UEE40411; UEE40611; UEE40811; UEE40911; UEE41011; UEE42211; UEE43011; UEE43211; UEE50111; UEE50211; UEE50411; UEE50511; UEE50711; UEE50911; UEE51011; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61511; UEE61811; UEE62111; UEE63011 |
| UEENEEH112A | Troubleshoot digital sub-systems | 80 | 3 | H102A; E101A | UEE30911; UEE31111; UEE31511; UEE40711; UEE41511; UEE41711; UEE61711; UEE61811 | UEE30111; UEE30211; UEE31211; UEE40111; UEE42211; UEE50111; UEE50511; UEE60211; UEE60411 |
| UEENEEH113A | Troubleshoot amplifiers in an electronic apparatus | 80 | 3 | E101A; H138A; H111A; H102A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A; | UEE30911; UEE31111; UEE31511; UEE41511; UEE41711; UEE61711 | UEE30111; UEE30211; UEE40111; UEE50111; UEE50511; UEE60211; UEE60411; UEE61811 |
| UEENEEH114A | Troubleshoot resonance circuits in an electronic apparatus | 80 | 3 | E104A; OR H169A; E101A | UEE30111; UEE30311; UEE30411; UEE30911; UEE31111; UEE31411; UEE31511; UEE40711; UEE41511; UEE41711; UEE61711; UEE61811 | UEE30211; UEE31211; UEE40111; UEE43211; UEE50111; UEE50511; UEE60211; UEE60411 |
| UEENEEH115A | Develop software solutions for microcontroller based systems | 60 | 3 | E101A |  | UEE30211; UEE30911; UEE31111; UEE31211; UEE31511; UEE40111; UEE40711; UEE41511; UEE41711; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| 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; |  | UEE30911; UEE40711; UEE41511; UEE50211; UEE50511; UEE60211; UEE61711 |
| 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 |  | UEE30311; UEE30911; UEE31211; UEE40711; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEH118A | Fault find and repair electronic apparatus | 40 | 3 | E101A |  | UEE30311; UEE30911; UEE31211; UEE31411; UEE40711; UEE41511; UEE50511; UEE60211; UEE61711; UEE61811 |
| UEENEEH119A | Repair predictable faults in television receivers | 120 | 3 | H112A; H113A; H138; E101A; E102A; H102A; H111A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A | UEE41511 | UEE30311; UEE30911; UEE40711; UEE43011; UEE43211; UEE50511; UEE60211; UEE61711 |
| 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 |  | UEE30311; UEE30911; UEE31111; UEE40711; UEE41511; UEE43011; UEE43211; UEE50511; UEE60211; UEE61711 |
| UEENEEH121A | Fault find and repair high volume office equipment | 120 | 3 | H103A; E101A; E102A; E105A; E107A; | UEE30111 | UEE30911; UEE40711; UEE41511; UEE43211; UEE50511; UEE60211 |
| UEENEEH122A | Fault find and repair remote control apparatus | 60 | 3 | H112A; H113A; H138; E101A; E102A; H102A; H111A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A |  | UEE30911; UEE40711; UEE41511; UEE43211; UEE50511; UEE60211; UEE61711 |
| UEENEEH123A | Fault find and repair microwave heating apparatus | 40 | 3 | E137A; E101A |  | UEE30911; UEE40711; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEH124A | Repair predictable faults in audio components | 40 | 3 | H112A; H113A; H138; E101A; E102A; H102A; H111A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A |  | UEE30311; UEE30911; UEE40711; UEE41511; UEE43011; UEE50511; UEE60211; UEE61711 |
| 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; |  | UEE30311; UEE30911; UEE40711; UEE41711; UEE50511; UEE60211 |
| UEENEEH128A | Install and test microwave antennae and waveguides | 60 | 3 | E102A; E105A; E107A; E101A |  | UEE21911; UEE30311; UEE30911; UEE40711; UEE50511; UEE60211 |
| UEENEEH129A | Fault find and repair navigation systems | 60 | 4 | H116B; H172B; H146A; H113A; E101A; H138A; H111A; H102A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A; |  | UEE40711; UEE50511; UEE60211 |
| UEENEEH130A | Fault find and repair satellite-based surveillance and observation systems | 60 | 4 | H116B; H172B; H146A; H113A; E101A; H138A; H111A; H102A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A; |  | UEE40711; UEE50511; UEE60211 |
| UEENEEH131A | Fault find and repair radar apparatus and systems | 120 | 4 | H116B; H172B; H146A; H113A; E101A; H138A; H111A; H102A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A; |  | UEE31211; UEE40711; UEE41511; UEE50511; UEE60211 |
| UEENEEH132A | Fault find and repair global positioning systems | 60 | 4 | H116B; H172B; H146A; H113A; E101A; H138A; H111A; H102A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A; |  | UEE31211; UEE40711; UEE41511; UEE50511; UEE60211 |
| UEENEEH133A | Fault find and repair telecommunication apparatus and systems | 60 | 4 | H112B; H113B; H115B; H113A; E101A; H138A; H111A; H102A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A; |  | UEE31211; UEE40711; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEH134A | Fault find and repair electronic medical equipment | 120 | 4 | H112B; H113B; H115B; H113A; E101A; H138A; H111A; H102A;  And  H114A; E104A; H169A  Or  E104A; G101A; G102A; |  | UEE40711; UEE41511; UEE50511; UEE60211 |
| UEENEEH135A | Design custom electronic equipment installations | 120 | 5 | H105B; H106A; E108A; E102A; E105A; E107A; E101A |  | UEE40711; UEE41511; UEE41711; UEE50511; UEE60211; UEE61711 |
| UEENEEH136A | Design commercial video/audio installations | 120 | 5 | H137B; H110B; E102A; E105A; E107A; E108A |  | UEE40811; UEE50511; UEE60211; UEE61711 |
| UEENEEH137A | Program and commission commercial video/audio systems | 40 | 4 | H110B; E102A; E105A; E107A; E108A |  | UEE40111; UEE43011; UEE43211; UEE50511; UEE60211 |
| UEENEEH138A | Fault find and repair complex power supplies | 40 | 3 | H111B; E102A; E104A; E107A AND; E103A; E104A 0R G101A OR E025B; G107A | UEE30911; UEE31511; UEE40711; UEE41511; UEE41711 | UEE30111; UEE30211; UEE31111; UEE40711; UEE50511; UEE60211; UEE61711 |
| UEENEEH139A | Troubleshoot basic amplifier circuits | 40 | 3 | H102B; AND H114B; OR G102A E102A; E104A; E107A AND E104A; E103A | UEE30911; UEE31111; UEE31511; UEE40711; UEE41511;UEE41711; UEE61711 | UEE30111; UEE30211; UEE50111; UEE50511; UEE60211; UEE60411; UEE61811 |
| UEENEEH140A | Fault find and repair sonar apparatus and systems | 120 | 4 | H112B; H113B; H115B; H116B; H172B; E102A; H146B |  | UEE40711; UEE41511; UEE50511; UEE60211 |
| UEENEEH141A | Manage computer systems/electronics projects | 40 | 6 | None | UEE60211; UEE60411 |  |
| UEENEEH142A | Solve oscillator problems | 40 | 3 | H114B; H139B E102A; E104A; AND E104A; E103A |  | UEE30911; UEE50511; UEE60211; UEE61711 |
| UEENEEH145A | Develop engineering solutions to analogue electronic problems | 80 | 5 | H139B;  E102A; E104A; E107A AND E104A; E103A |  | UEE50111; UEE50511; UEE60211; UEE60411; UEE61811 |
| UEENEEH146A | Solve fundamental electronic communications system problems | 40 | 3 | H113B | UEE30911; UEE40711; UEE41511; UEE61711 | UEE43011; UEE43211; UEE60211 |
| UEENEEH147A | Assess electronic apparatus compliance | 60 | 6 | None |  | UEE43011; UEE43211; UEE60211; UEE60611; UEE61111; UEE61511; UEE61711; UEE61811; UEE62111; UEE63011 |
| UEENEEH148A | Design and develop advanced digital systems | 40 | 6 | None |  | UEE40111; UEE40611; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEH149A | Develop engineering solutions to audio electronic problems | 60 | 5 | H139B; E102A; E104A; E107A AND E104A; E103A |  | UEE40111; UEE40711; UEE41511; UEE43011; UEE43211; UEE50511; UEE60211; UEE61711 |
| UEENEEH150A | Assemble and set up basic security systems | 80 | 2 | E102A; E105A; E107A; | UEE41611; UEE31411 | UEE30211; UEE30311; UEE30811; UEE30911; UEE40111; UEE40711; UEE41511; UEE43211; UEE50111; UEE50411; UEE50511; UEE60211; UEE60411; UEE60611; UEE61111; UEE61711; UEE61811; UEE62111; UEE63011 |
| UEENEEH151A | Install large security systems | 100 | 3 | H150B; E102A; E105A; E107A | UEE31411 | UEE30211; UEE30311; UEE30911; UEE40711; UEE41511; UEE43011; UEE50111; UEE50511; UEE60211; UEE60411; UEE61811 |
| UEENEEH152A | Enter instructions and test wired and wireless security systems | 40 | 3 | H150B; E102A; E105A; E107A | UEE31411 | UEE30211; UEE30311; UEE30911; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEH153A | Program and test large security systems | 120 | 4 | H154B; H155B; H156B; H152B; H150B; E102A; E105A; E107A |  | UEE31411; UEE40711; UEE41511; UEE43011; UEE43211; UEE50511; UEE60211 |
| UEENEEH154A | Program and commission commercial security systems | 60 | 3 | H152B; H150B; E102A; E105A; E107A |  | UEE30911; UEE31411; UEE40711; UEE41511; UEE60211 |
| UEENEEH155A | Program and commission commercial access control security systems | 60 | 3 | H152B; H150B; E102A; E105A; E107A |  | UEE30911; UEE31411; UEE40711; UEE41511; UEE60211 |
| UEENEEH156A | Program and commission commercial security closed circuit television systems | 60 | 3 | H152B; H150B; E102A; E105A; E107A |  | UEE30911; UEE31411; UEE50511; UEE60211 |
| UEENEEH157A | Develop basic plans for integrating security systems | 40 | 4 | H153B; H154B; H155B; H156B; H152B; H150B; E102A; E105A; E107A |  | UEE50511; UEE60211; UEE60411; UEE61711 |
| UEENEEH158A | Design integrated security systems | 40 | 5 | H116B; H157B; H153B; H154B; H155B; H156B; H152B; H150B; H146B; H113B; E102A; E105A; E107A |  | UEE50511; UEE60211; UEE61711 |
| 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) |  | UEE40711; UEE50511; UEE60211; UEE61711 |
| UEENEEH160A | Plan large electronic projects | 60 | 6 | None |  | UEE40711; UEE60211; UEE61711 |
| UEENEEH161A | Install fire detection and warning system apparatus | 40 | 2 | E102A; E105A; E107A | UEE21011; UEE31011; UEE40811 | UEE21911; UEE30911; UEE40711; UEE50511; UEE60211 |
| UEENEEH162A | Verify compliance and functionality of fire protection system installations | 60 | 2 | H161B; E102A; E105A; E107A | UEE31011; UEE40811 | UEE21011; UEE30911; UEE40711; UEE50511; UEE60211 |
| UEENEEH163A | Enter and verify programs for fire protection systems | 40 | 3 | H162B; H161B; E102A; E105A; E107A | UEE31011; UEE40811 | UEE30911; UEE40711; UEE50511; UEE60211 |
| UEENEEH164A | Commission large fire protection systems | 40 | 3 | H163B; H162B; H161B; E102A; E105A; E107A | UEE40811 | UEE30911; UEE31011; UEE40111; UEE40711; UEE41511; UEE50511; UEE60211 |
| UEENEEH165A | Troubleshoot fire protection systems | 40 | 3 | H164B; H163B; H162B; H161B; E102A; E105A; E107A |  | UEE30911; UEE31011; UEE50511; UEE60211 |
| UEENEEH166A | Troubleshoot microcontroller based hardware systems | 40 | 3 | None |  | UEE30211; UEE30911; UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEH167A | Commission electronics and communications systems | 20 | 5 | None | UEE50511; UEE60211 | UEE40111; UEE40711; UEE41511; UEE50511 |
| UEENEEH168A | Modify - redesign of electronics and communications systems | 20 | 5 | E101A | UEE50511; UEE60211 | UEE40711; UEE41511; UEE50511 |
| UEENEEH169A | Solve problems in basic electronic circuits | 100 |  | E101A |  | UEE21911; UEE30211; UEE30311; UEE30911; UEE31411; UEE40711; UEE41511; UEE50111; UEE50511; UEE60211; UEE60411; UEE61811 |
| UEENEEH171A | Troubleshoot faults in television receivers | 120 | 3 | H119B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A) |  | UEE30311; UEE30911; UEE40711; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEH172A | Troubleshoot communication systems | 80 | 3 | H146B |  | UEE30311; UEE30911; UEE41511; UEE50511; UEE60211; UEE61711 |
| UEENEEH173A | Troubleshoot professional audio reproduction components | 120 | 3 | H124B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A) |  | UEE30311; UEE30911; UEE40711; UEE41511; UEE41711; UEE50511; UEE60211 |
| UEENEEH174A | Troubleshoot audio - video recording equipment | 120 | 3 | H117B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A) |  | UEE30311; UEE30911; UEE40711; UEE41511; UEE41711; UEE50511; UEE60211; UEE61711 |
| UEENEEH175A | Troubleshooting in security system installations | 60 | 4 | H153B; H154B; H155B; H156B; H152B; H150B; E102A; E105A; E107A |  | UEE40711; UEE41511; UEE41711; UEE50511; UEE60211; UEE61711 |
| 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) |  | UEE40711; UEE41511; UEE41711; UEE50511; UEE60211; UEE61711 |
| UEENEEH177A | Diagnose and rectify faults in recording and replay equipment | 60 | 4 | H174B; H117B; H112B; H113B; H138B; E102A; H111B (E102A; E104A; E107A AND E103A; E104A OR G101A OR E025B; G107A) |  | UEE40711; UEE41511; UEE41711; UEE50511; UEE60211; UEE61711 |
| UEENEEH178A | Diagnose and rectify faults in camera circuits and equipment | 60 | 4 | H118B |  | UEE40711; UEE41511; UEE41711; UEE50511; UEE60211; UEE61711 |
| 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) |  | UEE40111; UEE40711; UEE41511; UEE50511; UEE60211; UEE61711 |
| 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) |  | UEE50511; UEE60211 |
| UEENEEH181A | Design electronic printed circuit boards | 40 | 5 | E101A |  | UEE50111; UEE50511; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEH182A | Develop engineering solutions to RF amplifiers problems | 40 | 5 | E101A |  | UEE50511; UEE60211; UEE61711 |
| UEENEEH183A | Analyse the performance of wireless-based electronic - communication systems | 40 | 5 | E101A |  | UEE50111; UEE50511; UEE50811; UEE60211; UEE60411; UEE61711; UEE61811 |
| UEENEEH184A | Modify digital signal processing (DSP) based sub-systems | 80 | 6 | E101A | UEE50211 | UEE40711; UEE60211; UEE60411; UEE60611; UEE61111; UEE61511; UEE61711; UEE61811; UEE62111; UEE63011 |
| UEENEEH185A | Design signal-conditioning subsystems | 80 | 6 | E101A |  | UEE41511; UEE60211; UEE60411; UEE60611; UEE61111; UEE61511; UEE61711; UEE61811; UEE62111; UEE63011 |
| UEENEEH186A | Commission satellite and microwave communication systems | 40 | 5 | H116B; H146B; H113B |  | UEE50511; UEE60211 |
| UEENEEH187A | Solve problems in electronic musical equipment circuits | 40 | 3 | H113B |  | UEE30911; UEE50511; UEE60211; UEE61711 |
| UEENEEH188A | Design and develop electronics - computer systems projects | 40 | 6 | E101A | UEE60211; UEE60411; UEE61711; UEE61811 | UEE50511; UEE60611; UEE61111; UEE61511; UEE62111; UEE63011 |
| UEENEEH189A | Provide Gate Array solutions for complex electronics systems | 60 |  | E101A |  | UEE30911; UEE50511; UEE60211; UEE60411 |
| UEENEEH190A | Provide engineering solutions to air traffic control system problems | 40 | 5 | E101A |  | UEE50511; UEE60211 |
| UEENEEH191A | Diagnose and rectify faults in air navigation circuits and systems | 120 | 5 | H127B; H172C; H190A; H113B; H146B |  | UEE50511; UEE60211 |
| UEENEEH192A | Develop solutions for air surveillance apparatus and systems | 120 | 5 | H116B; H172C; H190A; H113B; H146B |  | UEE50511; UEE60211 |

### I - Instrumentation and Control Competency Standard Units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEI101A | Use instrumentation drawings, specification, standards and equipment manuals | 40 | 3 | E101A; E107A | UEE31211 UEE31811 UEE40411 UEE50211 UEE31211; UEE31811; UEE40411; UEE50211; UEE31211 UEE31811 UEE40411 UEE50211; UEE40411; UEE42211; UEE31211; UEE31811; UEE40411; UEE50211; UEE51011; UEE61511 | UEE30211; UEE30911; UEE33011; UEE40111; UEE40311; UEE40611; UEE40911; UEE41011; UEE43011; UEE43211; UEE50411; UEE50511; UEE50911; UEE53011; UEE60211; UEE60411; UEE60611; UEE61111; UEE62111; UEE63011 |
| UEENEEI102A | Solve problems in pressure measurement components and systems | 40 | 3 | I101A;  E101A; E107A | UEE31211 UEE31811 UEE40411 UEE50211 UEE31211; UEE31811; UEE40411; UEE50211; UEE31211 UEE31811 UEE40411 UEE50211; UEE40411; UEE42211; UEE31211; UEE31811; UEE40411; UEE50211; UEE51011; UEE61511 | UEE33011; UEE40611; UEE40911; UEE41011; UEE43011; UEE43211; UEE50411; UEE53011; UEE60611; UEE61111; UEE63011 |
| UEENEEI103A | Solve problems in density/level measurement components and systems | 40 | 3 | I102A; I101A; E101A; E107A | UEE31211 UEE31811 UEE40411 UEE50211 UEE31211; UEE31811; UEE40411; UEE50211; UEE31211 UEE31811 UEE40411 UEE50211; UEE40411; UEE42211; UEE31211; UEE31811; UEE40411; UEE50211; UEE51011; UEE61511 | UEE33011; UEE40611; UEE40911; UEE41011; UEE43011; UEE43211; UEE50411; UEE50911; UEE53011; UEE60611; UEE61111; UEE63011 |
| UEENEEI104A | Solve problems in flow measurement components and systems | 40 | 3 | I102A;  E101A; E107A | UEE31211 UEE31811 UEE40411 UEE50211; UEE31211; UEE31811; UEE40411; UEE50211; UEE31211 UEE31811 UEE40411 UEE50211; UEE40411; UEE42211; UEE31211; UEE31811; UEE40411; UEE50211; UEE51011; UEE61511 | UEE33011; UEE40611; UEE40911; UEE41011; UEE43011; UEE43211; UEE50411; UEE50911; UEE53011; UEE60611; UEE61111; UEE63011 |
| UEENEEI105A | Solve problems in temperature measurement components and systems | 40 | 3 | I101A;  E101A; E107A | UEE31211 UEE31811 UEE40411 UEE50211; UEE31211; UEE31811; UEE40411; UEE50211; UEE31211 UEE31811 UEE40411 UEE50211; UEE40411; UEE42211; UEE31211; UEE31811; UEE40411; UEE50211; UEE51011; UEE61511 | UEE33011; UEE40611; UEE40911; UEE41011; UEE43011; UEE43211; UEE50411; UEE50911; UEE53011; UEE60611; UEE61111; UEE63011 |
| UEENEEI106A | Set up and adjust PID control loops | 40 | 3 | I103A; I104A; I105A; and G102A or E119A (I101B; E102A; E105A; E107A; G101A; E104A) | UEE31211 UEE31811 UEE50211; UEE31211; UEE31811; UEE50211; UEE31211 UEE31811 UEE50211; UEE42211; UEE31211; UEE31811; UEE50211; UEE51011; UEE61511 | UEE40411; UEE40411; UEE40411; UEE43211; UEE61111 |
| UEENEEI107A | Install instrumentation and control cabling and tubing | 20 | 3 | I101A;  E101A; E107A | UEE31210; UEE31810; UEE50210; UEE31211; UEE31810 UEE50210 UEE31210 UEE31810 UEE50210 UEE42211; UEE31210 UEE31810 UEE50210 UEE51011; UEE61511 | UEE33011; UEE40411; UEE43011; UEE43211; UEE53011; UEE61111 |
| UEENEEI108A | Install instrumentation and control apparatus and associated equipment | 20 | 3 | I101A;  E101A; E107A | UEE31210; UEE31810; UEE50210; UEE31211; UEE31810 UEE50210 UEE31210 UEE31810 UEE50210 UEE42211; UEE31210 UEE31810 UEE50210 UEE51011; UEE61511 | UEE33011; UEE40411; UEE43011; UEE43211; UEE53011; UEE61111 |
| 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) | UEE31210; UEE31810; UEE50210; UEE31211; UEE31810 UEE50210 UEE31210 UEE31810 UEE50210 UEE42211; UEE31210 UEE31810 UEE50210 UEE51011; UEE61511 | UEE40411; UEE43211; UEE61111 |
| UEENEEI111A | Find and rectify faults in process final control elements | 40 | 3 | I107A; I108A (I101B; E102A; E105A; E107A) | UEE31211; UEE42211; UEE50210UEE61511 | UEE40411; UEE43211; UEE61111 |
| 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) | UEE31210; UEE31810; UEE40910; UEE42610; UEE50210; UEE50910; UEE60710; UEE61210 UEE31211; UEE31810 UEE40910 UEE42610 UEE50210 UEE50910 UEE60710 UEE61210 UEE31210 UEE31810 UEE40910 UEE42610 UEE50210 UEE50910 UEE60710 UEE61210 UEE42211; UEE31210 UEE31810 UEE40910 UEE42610 UEE50210 UEE50910 UEE51011; UEE60710 UEE61210 UEE61511 | UEE43211; UEE61111 |
| 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) | UEE31210; UEE31810; UEE50210; UEE31211; UEE31810 UEE50210 UEE31210 UEE31810 UEE50210 UEE42211; UEE31210 UEE31810 UEE50210 UEE51011; UEE61511 | UEE40411; UEE43211; UEE61111 |
| UEENEEI114A | Trouble shoot process control systems | 60 | 3 | I110A (I106B; I103B; I104B; I105B AND G102A OR H114B; I101B; E102A; E105A; E107A;G101A; E104A) |  | UEE42211; UEE51011; UEE61511 |
| UEENEEI115A | Trouble shooting in medical equipment control systems | 120 | 3 | E101A |  | UEE51011; UEE61511 |
| UEENEEI116A | Assemble, enter and verify operating instructions in microprocessor equipped devices | 20 | 2 | E101A | UEE21610; UEE30707; UEE31007; UEE21007 UEE21610 UEE30707 UEE31007 UEE21007 UEE21610 UEE30707 UEE31007 UEE21007 UEE21610 UEE30707 UEE31007 | UEE20511; UEE21011; UEE21611; UEE21911; UEE30111; UEE30211; UEE30711; UEE30911; UEE31011; UEE33011; UEE40111; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41511; UEE41911; UEE42011; UEE42711; UEE42811; UEE43011; UEE43211; UEE50111; UEE50311; UEE50411; UEE50711; UEE50911; UEE53011; UEE60211; UEE60611; UEE60911; UEE61111; UEE61711; UEE62111; UEE63011 |
| UEENEEI117A | Calibrate, adjust and test measuring instruments | 40 | 3 | I101A; |  | UEE30911; UEE42211; UEE50511; UEE51011; UEE60211; UEE61511 |
| UEENEEI118A | Set up weighting measuring and control instruments | 20 | 3 | E104A; I101A |  | UEE51011; UEE61511 |
| UEENEEI119A | Set up industrial field control devices | 60 | 4 | I124A; I139A; |  | UEE40411; UEE40611; UEE40911; UEE50411; UEE50911; UEE53011; UEE60611; UEE61111; UEE62211; UEE63011 |
| UEENEEI120A | Provide solutions to problems in industrial control systems | 60 | 4 | I124A; I139A; |  | UEE40411; UEE40611; UEE40711; UEE40911; UEE50411; UEE50511; UEE50911; UEE53011; UEE60211; UEE60611; UEE61111; UEE62211; UEE63011 |
| UEENEEI121A | Trouble shoot in measuring and analysis systems | 40 | 4 | I112B  And  I118A  Or  I131A  Or  132A  Or  I133A |  | UEE42211; UEE50411; UEE51011; UEE61511 |
| 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) |  | UEE42211; UEE51011; UEE61511 |
| UEENEEI123A | Design electronic control systems | 60 | 6 | I124A; I139A; |  | UEE60211; UEE60611; UEE61111; UEE61511; UEE62111; UEE63011 |
| UEENEEI124A | Fault find and repair analogue circuits and components in electronic control systems | 60 | 4 | G108A or I112A | UEE40910; UEE41110; UEE50910; UEE40910 UEE41110 UEE50910 UEE40910UEE41110UEE50910 UEE40911; UEE41111; UEE42211; UEE40910 UEE41110 UEE50910 UEE51011; UEE60611; UEE61511 | UEE40411; UEE40611; UEE40711; UEE50111; UEE50211; UEE50411; UEE50511; UEE50911; UEE53011; UEE60211; UEE60411; UEE61111; UEE62211; UEE62311; UEE63011 |
| UEENEEI125A | Provide solutions to fluid circuit operations | 60 | 4 | E101A; E102A; E107A |  | UEE40411; UEE40611; UEE40911; UEE42211; UEE50211; UEE50411; UEE50911; UEE51011; UEE53011; UEE60611; UEE61111; UEE61511; UEE62211; UEE63011 |
| UEENEEI126A | Provide solutions to pneumatic-hydraulic system operations | 80 | 4 | I125A (E101A; E102A; E107A) |  | UEE40411; UEE40611; UEE40911; UEE42211; UEE50211; UEE50411; UEE50911; UEE51011; UEE53011; UEE60611; UEE61111; UEE61511; UEE62211; UEE63011 |
| UEENEEI127A | Analyse complex electronic circuits controlling fluids | 80 | 5 | I125A (E101A; E102A; E107A) |  | UEE50211; UEE50411; UEE51011; UEE60611; UEE61111; UEE62211; UEE63011 |
| UEENEEI128A | Set up and configure controls on complex fluid systems | 80 | 6 | I124A; I127A; I139A |  | UEE60611; UEE61111; UEE61511; UEE62111; UEE63011 |
| UEENEEI129A | Set up electronically controlled mechanically operated complex systems | 80 | 6 | I124A; I127A; I139A |  | UEE60611; UEE61111; UEE61511; UEE62111; UEE63011 |
| UEENEEI130A | Set up electronically controlled robotically operated complex systems | 80 | 6 | I124A; I127A; I139A; |  | UEE60211; UEE60611; UEE61111; UEE61511; UEE62111; UEE63011 |
| UEENEEI131A | Set up gas analysis measuring and control instruments | 20 | 3 | E104A; I101A |  | UEE51011; UEE61511 |
| UEENEEI132A | Set up water analysis measuring and control instruments | 20 | 3 | E104A; I101A |  | UEE51011; UEE61511 |
| UEENEEI133A | Set up scientific analysis measuring and control instruments | 20 | 3 | E104A; I101A |  | UEE51011; UEE61511 |
| UEENEEI134A | Manage instrumentation and control projects | 40 | 6 | E101A | UEE60611; UEE61511 |  |
| UEENEEI135A | Plan instrumentation and control projects | 60 | 6 | E101A | UEE60611; UEE61511 |  |
| UEENEEI136A | Manage automated control systems projects | 40 | 6 | E101A | UEE61111 |  |
| UEENEEI137A | Plan automated and control systems projects | 60 | 6 | E101A | UEE61111; |  |
| UEENEEI138A | Provide solutions to extra low voltage (ELV) electro-pneumatic control systems and drives | 60 | 2 | E101A | UEE43211 | UEE60611; UEE62111; UEE62211; UEE63011 |
| UEENEEI139A | Diagnose and rectify faults in digital controls systems | 60 | 4 | G102A or I112A | UEE40910; UEE41110; UEE50910; UEE40910 UEE41110 UEE50910 UEE40910 UEE41110 UEE50910 UEE40911; UEE41111; UEE42211; UEE40910 UEE41110 UEE50910 UEE51011; UEE60611; UEE61511 | UEE40411; UEE40611; UEE40711; UEE50211; UEE50411; UEE50511; UEE50911; UEE53011; UEE60211; UEE61111; UEE62211; UEE62311; UEE63011 |
| UEENEEI140A | Plan the electrical installation of integrated systems | 20 | 3 | E108A: E101A: E105A; E107A  OR  G106A ; E101A; E102A; E104A; E105A; E107A; G101A; |  | UEE30411; UEE40211; UEE40311; UEE40411; UEE40611; UEE41011; UEE43111; UEE50211; UEE50311; UEE50411; UEE62111; UEE63011 |
| UEENEEI141A | Develop electrical integrated systems | 20 | 3 | D001B And E108A: E101A: E105A; E107A; OR  G106A E101A; E102A; E104A; E105A; E107A; G101A; |  | UEE30411; UEE40211; UEE40311; UEE40611; UEE41011; UEE40411; UEE43111; UEE50211; UEE50311; UEE50411; UEE62111; UEE63011 |
| 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; |  | UEE40211; UEE40611; UEE43111; UEE50211; UEE50311; UEE50411; UEE62111; UEE63011 |
| 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; |  | UEE40211; UEE40611; UEE43112 UEE50211; UEE50311; UEE50411; UEE62111; UEE63011 |
| 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; E107A; G101A; |  | UEE40211; UEE40611; UEE43113 UEE50211; UEE50311; UEE50411; UEE62111; UEE63011 |
| UEENEEI145A | Diagnose and rectify faults in a.c. motor drive systems | 60 | 5 | G006A; I149A |  | UEE50211; UEE50411; UEE50911; UEE51011; UEE53011; UEE60611; UEE61111; UEE61511; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEI146A | Diagnose and rectify faults in d.c. motor drive systems | 60 | 5 | G101A; I149A |  | UEE50211; UEE50411; UEE50911; UEE51011; UEE53011; UEE60611; UEE61111; UEE61511; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEI147A | Diagnose and rectify faults in servo drive systems | 60 | 5 | G006A; I149A |  | UEE50211; UEE50411; UEE50911; UEE51011; UEE53011; UEE60611; UEE61111; UEE61511; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEI148A | Solve problems in single phase electronic power control circuits | 60 | 4 | H113A Or H144A; |  | UEE40411; UEE40611; UEE40911; UEE41111; UEE42211; UEE50211; UEE50411; UEE50511; UEE50911; UEE51011; UEE53011; UEE60211; UEE60611; UEE61111; UEE61511; UEE62211; UEE63011 |
| UEENEEI149A | Solve problems in polyphase electronic power control circuits | 60 | 4 | G102A; I148A |  | UEE40411; UEE40611; UEE40911; UEE41111; UEE50211; UEE50411; UEE50511; UEE50911 UEE51011; UEE53011; UEE60211; UEE60611; UEE61111; UEE61511; UEE62211; UEE63011 |
| UEENEEI150A | Develop, enter and verify discrete control programs for programmable controllers | 60 | 3 | E101A | UEE30707; UEE31210; UEE31810; UEE50210; UEE31211; UEE31810 UEE50210 UEE30707 UEE31210 UEE31810 UEE50210 UEE42211; UEE30707 UEE31210 UEE31810 UEE50210 UEE51011; UEE61511 | UEE30611; UEE30711; UEE31011; UEE32211; UEE33011; UEE40411; UEE40511; UEE40611; UEE40811; UEE40911; UEE41011; UEE41111; UEE41611; UEE41911; UEE42011; UEE42711; UEE42811; UEE43011; UEE43211; UEE50411; UEE50711; UEE50911; UEE53011; UEE60411; UEE60611; UEE60911; UEE61111; UEE61711; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEI151A | Develop, enter and verify word and analogue control programs for programmable logic controllers. | 60 | 4 | I150A; |  | UEE40411; UEE40611; UEE40811; UEE40911; UEE41111; UEE41611; UEE42011; UEE42211; UEE42711; UEE42811; UEE50211; UEE50411; UEE50911; UEE51011; UEE53011; UEE60611; UEE60911; UEE61111; UEE61511; UEE61711; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEI152A | Develop, enter and verify programs in Supervisory Control and Data Acquisition systems | 60 | 4 | I151A |  | UEE40411; UEE40611; UEE40811; UEE40911; UEE41111; UEE41611; UEE42011; UEE42211; UEE42711; UEE42811; UEE50211; UEE50411; UEE50911; UEE51011; UEE53011; UEE60611; UEE60911; UEE61111; UEE61511; UEE61711; UEE62011; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEI153A | Design and configure Human-Machine Interface (HMI) networks | 60 | 6 | I151A |  | UEE50111; UEE50511; UEE60211; UEE60411; UEE60611; UEE61111; UEE61511; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEI154A | Design and use advanced programming tools PC networks and HMI Interfacing | 120 | 6 | I151A |  | UEE40911; UEE60211; UEE60411; UEE60611; UEE61111; UEE61511; UEE61711; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEI155A | Develop structured programs to control external devices | 40 | 4 | E101A |  | UEE40111; UEE40611; UEE40711; UEE41511; UEE42211; UEE50111; UEE50211; UEE50411; UEE50511; UEE50811; UEE50911; UEE51011; UEE53011; UEE60211; UEE60411; UEE60611; UEE61111; UEE61511; UEE62111; UEE62211; UEE62311; UEE63011 |
| UEENEEI156A | Develop and test code for microcontroller devices | 60 | 5 | E101A |  | UEE50111; UEE50211; UEE50411; UEE50511; UEE50911; UEE51011; UEE53011; UEE60211; UEE60411; UEE60611; UEE60911; UEE61111; UEE61511; UEE61711; UEE62111; UEE62211; UEE63011 |
| UEENEEI157A | Configure and maintain industrial control system networks | 60 | 5 | E101A |  | UEE50111; UEE50211; UEE50411; UEE50511; UEE50911; UEE51011; UEE53011; UEE60211; UEE60411; UEE60611; UEE61111; UEE61511; UEE61711; UEE62111; UEE62211; UEE62311; UEE63011 |

### J - Refrigeration and Air Conditioning units

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| --- | --- | --- | --- | --- | --- | --- |
| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| UEENEEJ040B | Manage refrigeration and air conditioning projects | 40 |  | None | UEE62511 |  |
| UEENEEJ069B | Plan refrigeration and air conditioning projects | 60 |  | None | UEE62411; UEE62511 |  |
| UEENEEJ102A | Prepare and connect refrigerant tubing and fittings | 30 | 2 | E101A; | UEE20111; UEE32111; UEE32211; UEE40511; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 | UEE22111; UEE30811; UEE33011; UEE40611; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEJ103A | Establish the basic operating conditions of vapour compression systems | 60 | 3 | E101A; | UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 | UEE22011; UEE22111; UEE30811; UEE33011; UEE40511; UEE40611; UEE43011; UEE50411; UEE51111; UEE53011; UEE62411; UEE63011 |
| UEENEEJ104A | Establish the basic operating conditions of air conditioning systems | 20 | 3 | E101A; | UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 | UEE20111; UEE30811; UEE32111; UEE33011; UEE40511; UEE40611; UEE43011; UEE50411; UEE53011; UEE63011 |
| UEENEEJ105A | Position, assemble and start up single head split air conditioning and water heating heat pump systems | 70 | 2 | E101A; J102A; J172A | UEE20111; UEE40511 | UEE33011; UEE43011; UEE53011 |
| UEENEEJ106A | Install refrigerant pipe work, flow controls and accessories | 60 | 3 | E101A; E102A; E105A; E137A; J102A; J103A; | UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 | UEE33011; UEE43011; UEE53011 |
| 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; | UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 |  |
| UEENEEJ108A | Recover, pressure test, evacuate, charge and leak test refrigerants | 60 | 3 | E101A: J102A; J103A | UEE32211; UEE42711;UEE42811;UEE42911; UEE50311; UEE51211; UEE62511 | UEE33011; UEE43011; UEE53011 |
| 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; | UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 |  |
| UEENEEJ110A | Select refrigerant piping, accessories and associated controls | 50 | 3 | E101A; J103A | UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 | UEE51111; UEE62411 |
| 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 | UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 |  |
| UEENEEJ112A | Diagnose and rectify faults in complex air conditioning/ refrigeration systems | 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 | UEE42711 |  |
| 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; | UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 |  |
| 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; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| 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; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| 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; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| 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; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| 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; |  | UEE32111; UEE32211; UEE42711; UEE42911; UEE50311; UEE51211; UEE62511 |
| 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; |  | UEE32211; UEE42711; UEE42911; UEE50311; UEE51211; UEE62511 |
| UEENEEJ120A | Resolve problems in industrial refrigeration systems | 20 | 3 | E101A; E102A; E105A; J102A; J103A; J104A; J106A; ; J107A; J108A ; J111A; J113A; J153A; J170A; P013A; P016A |  | UEE32211; UEE42711 UEE42911; UEE42711; UEE42911 |
| 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 |  | UEE42711; UEE42811 |
| 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 |  | UEE42711; UEE42811 |
| 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 |  | UEE42711; UEE42811 |
| 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 |  | UEE42711; UEE42811 |
| 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 |  | UEE42711; UEE42811 |
| 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 |  | UEE42711; UEE42811 |
| UEENEEJ127A | Establish the thermodynamic parameters of refrigeration and air conditioning 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 | UEE42911; UEE51211; UEE62411; UEE62511 | UEE51111 |
| 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 | UEE62411; UEE62511 | UEE51111; UEE51211 |
| UEENEEJ129A | Establish heat loads for commercial refrigeration and/or air conditioning applications | 80 | 4 | 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 | UEE42911; UEE51211; UEE62411; UEE62511 | UEE51111 |
| 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 |  | UEE51111; UEE51211; UEE62411; UEE62511 |
| 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 |  | UEE51111; UEE51211 |
| 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 |  | UEE51111; UEE51211; UEE62411; UEE62511 |
| 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; |  | UEE51111; UEE51211; UEE62411; UEE62511 |
| 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 |  | UEE51111; UEE51211; UEE62411; UEE62511 |
| UEENEEJ135A | Design control systems for refrigeration or heating, ventilation and air conditioning systems | 80 | 5 | 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 |  | UEE51111; UEE51211; UEE62411; UEE62511 |
| 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 | UEE42811 | UEE51111; UEE51211; UEE62411; UEE62511 |
| 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 |  | UEE50311; UEE51111; UEE51211; UEE62411; UEE62511 |
| 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 | UEE62411; UEE62511 |  |
| 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 |  | UEE62411; UEE62511 |
| 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 |  | UEE62411; UEE62511 |
| 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 |  | UEE62411; UEE62511 |
| 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 |  | UEE62411; UEE62511 |
| 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 |  | UEE62411; UEE62511 |
| UEENEEJ145A | Design hydronic systems and select equipment | 80 | 6 | J138A;  J165A: J164A; J192A; and J193A orJ109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A |  | UEE62411; UEE62511 |
| UEENEEJ146A | Design complex control systems for refrigeration or heating, ventilation, air conditioning systems | 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 |  | UEE62411; UEE62511 |
| 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 |  | UEE62511 |
| 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 |  | UEE62511 |
| UEENEEJ149A | Develop heat exchanger design specifications | 80 | 6 | J138A;  J165A: J164A; J192A; and J193A orJ109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A |  | UEE62411; UEE62511 |
| UEENEEJ150A | Evaluate new and alternative technologies applicable to electrotechnology applications | 40 | 6 | None |  | UEE62411; UEE62511 |
| 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; | UEE32111 | UEE30611; UEE33011; UEE43011; UEE53011 |
| UEENEEJ153A | Find and rectify faults in motors and associated controls in refrigeration and air conditioning systems | 50 | 3 | E107A; J108A ; J194A;  E101A; E103A; | UEE32111; UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 | UEE33011; UEE43011; UEE53011 |
| 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; | UEE32111 | UEE33011; UEE43011; UEE53011 |
| 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; | UEE32111 | UEE33011; UEE43011; UEE53011 |
| 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; | UEE32111 | UEE33011; UEE43011; UEE53011 |
| UEENEEJ157A | Service electrical heating appliances | 60 | 3 | J154A;  G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A;  or  J153A;E107A; J108A ; J194A; E101A; E103A; |  | UEE32111; UEE33011; UEE43011; UEE53011 |
| UEENEEJ158A | Service dishwasher machines | 40 | 3 | J154A;  G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A;  or  J153A;E107A; J108A ; J194A; E101A; E103A; |  | UEE32111; UEE33011; UEE43011; UEE53011 |
| UEENEEJ159A | Service gas heating appliances | 40 | 3 | J154A;  G006A; E101A; E102A; E104A; E105A; E107A; G101A; G106A;  or  J153A;E107A; J108A; J194A; E101A; E103A; |  | UEE32111; UEE33011; UEE43011; UEE53011 |
| 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. | UEE32111 |  |
| UEENEEJ162A | Recover, pressure test, evacuate, charge and leak test refrigerants — appliances | 50 | 3 | J102A; J195A  E101A; | UEE32111 | UEE33011; UEE43011; UEE53011 |
| 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 | UEE51211; UEE62411; UEE62511 | UEE51111 |
| UEENEEJ165A | Evaluate thermodynamic and fluid parameters of refrigeration systems | 100 | 5 | J127A; J164A;  J192A; and J193A 0r  J109A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J111A; J113A; J153A; J170A; K142A; P012A; P017A; P024A; P025A | UEE51211; UEE62411; UEE62511 | UEE51111 |
| 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; |  | UEE32211; UEE51211; UEE62511 |
| 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; |  | UEE32211; UEE42711; UEE42811; UEE42911; UEE51211; UEE62511 |
| UEENEEJ168A | Maintain microbial control of refrigeration and air conditioning systems | 20 | 3 | None |  | UEE32211; UEE42711; UEE42911; UEE50311; UEE51211; UEE62511 |
| UEENEEJ170A | Diagnose and rectify faults in air conditioning and refrigeration control systems | 70 | 3 | J153A;  E107A; J108A ; J194A; E101A; E103A; | UEE32211; UEE42711; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 | UEE33011; UEE43011; UEE53011 |
| 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; |  | UEE32111; UEE32211; UEE42711; UEE42911; UEE51211; UEE62511; UEE62511 |
| UEENEEJ172A | Recover, pressure test, evacuate, charge and leak test refrigerants — split systems | 60 | 2 | J102A;  E101A; | UEE20111; UEE40511 |  |
| UEENEEJ173A | Service and repair microwave ovens | 40 | 3 | J154A:  G006A;  E101A; E102A; E104A; E105A; E107A; G101A; G106A;  or  J153A;  E107A; J108A ; J194A; E101A; E103A; |  | UEE32111; UEE33011; UEE43011; UEE53011 |
| UEENEEJ174A | Apply safety awareness and legal requirements for hydrocarbon refrigerants | 10 | 3 | None |  | UEE32111; UEE32211; UEE40511; UEE42711; UEE42911; UEE50311; UEE51111; UEE51211; UEE62411; UEE62511 |
| 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 |  | UEE32111; UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| UEENEEJ176A | Install and commission hydrocarbon refrigeration 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; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| UEENEEJ177A | Design hydrocarbon refrigerated 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; |  | UEE51111; UEE51211; UEE62411; UEE62511 |
| UEENEEJ178A | Apply safety awareness and legal requirements for ammonia refrigerant | 10 | 3 | None |  | UEE32211; UEE42711; UEE42911; UEE50311; UEE51111; UEE51211; UEE62411; UEE62511 |
| 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; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| 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; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| 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 |  | UEE51111; UEE51211; UEE62411; UEE62511 |
| 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; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| UEENEEJ183A | Design secondary refrigerant system | 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 |  | UEE51111; UEE51211; UEE62411; UEE62511 |
| UEENEEJ184A | Apply safety awareness and legal requirements for carbon dioxide refrigerant | 10 | 3 | None |  | UEE32111; UEE32211; UEE42711; UEE42911; UEE51111; UEE51211; UEE62411; UEE62511 |
| 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; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| UEENEEJ186A | Install and commission carbon dioxide refrigeration systems, components and associated equipment | 20 | 3 | J184A; J185A  J111A; J113A; E101A; E102A; E103A; E105A; E107A; E137A; J102A; J103A; J104A; J106A; J107A; J108A; J110A; J153A; J170A; P012A; P017A; |  | UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| 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 |  | UEE51111; UEE51211; UEE62411; UEE62511 |
| 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 |  | UEE32111; UEE32211; UEE42711; UEE42911; UEE51211; UEE62511 |
| 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 |  | UEE32111 |
| 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 |  | UEE42911; UEE51111; UEE51211; UEE62411; UEE62511 |
| 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 |  | UEE42911; UEE51111; UEE51211; UEE62411; UEE62511 |
| 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 | UEE42911; UEE51211; UEE62411; UEE62511 | UEE40511; UEE51111 |
| UEENEEJ193A | Analyse the thermodynamic performance of HVAC/R systems | 40 | 4 | None | UEE62411 | UEE40511; UEE51111 |
| UEENEEJ194A | Solve problems in low voltage refrigeration circuits | 40 | 3 | E103A and J103A or J195A  E101A; | UEE32111; UEE32211; UEE42811; UEE42911; UEE50311; UEE51211; UEE62511 | UEE33011; UEE43011; UEE53011 |
| UEENEEJ195A | Establish the basic operating conditions of vapour compression systems - appliances | 50 | 3 | E101A | UEE32111 | UEE33011; UEE43011; UEE53011 |
| UEENEEJ196A | Operate Ammonia Refrigeration Plant | 40 | 3 | J178A |  |  |

### K - Renewable/Sustainable Energy units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEK101A | Maintain safety and tidiness of remote area power supply systems | 20 | 2 | K102A; E101A | UEE21311; UEE21411 |  |
| UEENEEK102A | Work safely with remote area power supply systems | 20 | 2 | E101A | UEE21311; UEE21411 |  |
| UEENEEK103A | Conduct periodic maintenance of remote area power supply battery banks | 40 | 2 | E101A; E102A; E103A; K101A;  K102A; E107A;  And  E131A  Or  E104A |  | UEE21311; UEE21411 |
| UEENEEK104A | Conduct periodic maintenance of remote area power supply generator sets | 40 | 2 | E101A; E102A; E103A; K101A;  K102A; E107A;  And  E131A  Or  E104A |  | UEE21311; UEE21411 |
| UEENEEK105A | Conduct periodic maintenance of remote area power supply photo voltaic arrays | 40 | 2 | E101A; E102A; E103A; K101A;  K102A; E107A;  And  E131A  Or  E104A |  | UEE21311; UEE21411 |
| UEENEEK106A | Conduct periodic maintenance of remote area power supply wind generators | 40 | 2 | E101A; E102A; E103A; K101A;  K102A; E107A;  And  E131A  Or  E104A |  | UEE21311; UEE21411 |
| 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 |  | UEE32011; UEE41611; UEE62011 |
| UEENEEK108A | Plan periodic maintenance schedules of remote area power supplies (RAPS) | 40 | 3 | E101A; E137A; K102A; K103A; K104A;  E101A; E102A; E103A; K101A |  | UEE32011; UEE41611; UEE62011 |
| UEENEEK109A | Attend to breakdowns in remote area power supplies (RAPS) | 20 | 3 | E101A; E102A; E103A; K101A; |  | UEE32011; UEE41611; UEE62011 |
| UEENEEK110A | Co-ordinate maintenance of renewable energy (RE) apparatus and systems | 20 | 4 | E101A; E102A; E103A; K101A; |  | UEE41611; UEE41911; UEE62011 |
| UEENEEK111A | Assemble and connect remote area power supplies | 60 | 2 | E101A; E102A; E107A; E108A  And  E131A  Or  E104A |  | UEE21311; UEE21411 |
| UEENEEK112A | Provide basic sustainable energy solutions for energy reduction in residential premises | 40 | 2 | None | UEE22111 | UEE21311; UEE21411 |
| UEENEEK114A | Promote sustainable energy practices in the community | 40 | 2 | None | UEE22111 | UEE20811; UEE21311; UEE21411 |
| UEENEEK116A | Maintain and repair remote area power generation facilities | 120 | 2 | K104A  E101A; E102A; E103A; E107A; K101A; K102A |  | UEE21311; UEE21411 |
| UEENEEK117A | Maintain and repair facilities associated with remote area essential service operations | 120 | 2 | E101A; E102A; E103A;  And  E131A  Or  E104A |  | UEE21311; UEE21411; UEE32011; UEE41611; UEE62011 |
| UEENEEK118A | Maintain and monitor remote area essential service (RAPS) operations | 120 | 2 | E101A K102A |  | UEE21311 |
| UEENEEK120A | Maintain operation of remote area power generation plant | 120 | 2 | K116A; |  | UEE32011; UEE41611; UEE62011 |
| UEENEEK121A | Manage renewable energy (RE) projects | 40 | 6 | None | UEE60911; UEE62011 |  |
| UEENEEK122A | Plan renewable energy (RE) projects | 60 | 6 | None | UEE60911; UEE62011 |  |
| UEENEEK123A | Carry out basic repairs to renewable energy apparatus | 80 | 2 | E104A; E108A;  E101A; E102A; E107A; | UEE32011; UEE41611; UEE41911; UEE50711; UEE60911; UEE62011 | UEE21311; UEE42011 |
| UEENEEK124A | Solve basic problems in micro hydro systems | 20 | 3 | G101A |  | UEE32011; UEE41611; UEE41911; UEE42011; UEE50711; UEE60911; UEE62011 |
| UEENEEK125A | Solve basic problems in photovoltaic energy apparatus and systems | 20 | 3 | E104A; E137A;  And  E108A  Or  G106A | UEE32011; UEE41611; UEE41911; UEE42011; UEE62011 | UEE30811; UEE40311; UEE40611; UEE50411; UEE50711; UEE60911; UEE62111 |
| UEENEEK127A | Diagnose and rectify faults in renewable energy control systems | 60 | 3 | K125A | UEE32011; UEE41611; UEE41911; UEE62011 | UEE42011; UEE50711; UEE60911 |
| UEENEEK128A | Solve problems in stand-alone renewable energy systems | 60 | 3 | K123A;  E104A; E108A; E102A; E103A; E105A; E107A | UEE32011; UEE41611; UEE60911; UEE62011 | UEE41911; UEE42011; UEE50711 |
| UEENEEK129A | Design renewable energy (RE) heating systems | 120 | 5 | K128A; |  | UEE50411; UEE50711; UEE60911; UEE62011; UEE62111; UEE63011 |
| UEENEEK130A | Solve problems in wind energy conversion systems rated up to 10 kW | 60 | 3 | G101A |  | UEE32011; UEE41611; UEE41911; UEE42011; UEE50711; UEE60911; UEE62011 |
| UEENEEK131A | Design wind energy conversion systems (WECS) rated to 10 kW | 60 | 5 | K130A;  E104A; E108A; E102A; E103A; E105A; E107A |  | UEE50411; UEE50711; UEE60911; UEE62011; UEE62111; UEE63011 |
| UEENEEK132A | Develop strategies to address environmental and sustainability issues in the energy sector | 20 | 5 | None | UEE50210 UEE50311; UEE50411; UEE50711; UEE50911; UEE51011; UEE51111; UEE53011; UEE60611; UEE60911; UEE61111; UEE61211; UEE61511; UEE61711; UEE61811; UEE62011; UEE62111; UEE62211; UEE62311; UEE62411; UEE62511; UEE63011 |  |
| UEENEEK133A | Design hybrid renewable power systems | 80 | 6 | K128B;  K123B; E104A; E108A; E102A; E103A; E105A; E107A |  | UEE60911; UEE62011; UEE62111; UEE63011 |
| UEENEEK134A | Install ELV stand-alone photovoltaic power systems | 60 | 3 | K125A; E104A; E108A; E102A; E103A; E105A; E107A |  | UEE32011; UEE41611; UEE41911; UEE42011; UEE50711; UEE60911; UEE62011 |
| UEENEEK135A | Design grid connected photovoltaic power supply systems | 60 | 4 | K125A; E104A; E108A; E102A; E103A; E105A; E107A | UEE42011 | UEE40611; UEE41611; UEE41911; UEE50411; UEE50711; UEE60911; UEE62011; UEE62111 |
| UEENEEK136A | Install, configure and commission LV micro-hydro systems rated up to 6.4 kW | 20 | 3 | G103A; K124A |  | UEE41611; UEE41911; UEE42011; UEE50711; UEE60911; UEE62011 |
| 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 |  | UEE32011; UEE41911; UEE41911; UEE42011; UEE50711; UEE60911 |
| UEENEEK138A | Design micro-hydro systems rated to 6.4 kW | 60 | 5 | K124A;  E104A; E108A; E102A; E103A; E105A; E107A |  | UEE50411; UEE50711; UEE60911; UEE62011; UEE62111; UEE63011 |
| UEENEEK139A | Design stand-alone renewable energy (RE) systems | 40 | 6 | K128A;  K123A; E104A; E108A; E102A; E103A; E105A; E107A |  | UEE60911; UEE62011; UEE62111; UEE63011 |
| 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 |  | UEE60911; UEE62011; UEE62111; UEE63011 |
| UEENEEK142A | Apply environmentally and sustainable procedures in the energy sector | 20 | 2 | None | UEE10111; 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 | UEE62211; UEE62311 |
| UEENEEK143A | Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications | 20 | 3 | K130A |  | UEE32011; UEE41611; UEE41911; UEE42011; UEE50711; UEE60911; UEE62011 |
| UEENEEK144A | Install, configure and commission LV wind energy conversion systems rated up to 10 kW | 40 | 3 | G103A; K130A |  | UEE41911; UEE42011; UEE50711; UEE60911 |
| UEENEEK145A | Implement and monitor energy sector environmental and sustainable policies and procedures | 20 | 4 | None | UEE40111; UEE40211; UEE40311; UEE40411; UEE40511; UEE40611; UEE40711; UEE40811; UEE40911; UEE41011; UEE41111; UEE41211; UEE41511; UEE41711; UEE41911; UEE42011; UEE42111; UEE42211; UEE42611; UEE42711; UEE42811; UEE42911; UEE43011; UEE43111; UEE43211; UEE50111; UEE50511; UEE51211; UEE60211; UEE60411 | UEE50711; UEE51111; UEE60211; UEE60411; UEE61711; UEE61811; UEE62211; UEE62311; UEE62411; UEE62511 |
| UEENEEK146A | Design energy management controls for electrical installations in buildings | 80 | 6 | K132A |  | UEE60911; UEE62011; UEE62111; UEE63011 |
| UEENEEK148A | Install, configure and commission LV grid connected photovoltaic power systems | 40 | 3 | G103A; K125A; | UEE42011 | UEE30811; UEE40311; UEE40611; UEE41911; UEE42011; UEE50411; UEE50711; UEE60911 |
| 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 | UEE32011; UEE41611; UEE62011 |  |
| UEENEEK151A | Develop effective engineering strategies for energy reduction in buildings | 60 | 6 | K132A |  | UEE51111; UEE51211; UEE60911; UEE62011; UEE62111; UEE62211; UEE62411; UEE62511; UEE63011 |
| UEENEEK152A | Develop strategies to address sustainability issues for electrical installations | 20 | 4 | G105A | UEE41011; UEE43111 | UEE40611; UEE41911; UEE42011; UEE50411; UEE50711; UEE60911 |
| UEENEEK153A | Assess energy loads and uses for energy efficiency in residential, office and retail premises | 40 | 4 | K152A | UEE43111 | UEE40611; UEE41011; UEE41911; UEE50411; UEE50711; UEE60911 |
| UEENEEK154A | Assess energy loads and uses for energy efficiency in commercial facilities | 40 | 4 | K153A |  | UEE40611; UEE41011; UEE41911; UEE43111; UEE50411; UEE50711; UEE60911 |
| UEENEEK155A | Assess energy loads and uses for energy efficiency in industrial properties and enterprises | 40 | 4 | K153A |  | UEE41011; UEE41911; UEE43111; UEE50411; UEE50711; UEE60911 |

### M - Hazardous units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| 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; UEENEEI112A; MEM7001B  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE33011; UEE40411; UEE40611; UEE40911; UEE42211; UEE42611; UEE43011; UEE50211; UEE50411; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE62311; UEE63011 |
| 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):  UEENEEG105A; UEENEEI112A; MEM7001B  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE33011; UEE40411; UEE40611; UEE40911; UEE42211; UEE42611; UEE43011; UEE50211; UEE50411; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE63011 |
| 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; UEENEEI112A; MEM7001B  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE33011; UEE40411; UEE40611; UEE40911; UEE42211; UEE42611; UEE43011; UEE50211; UEE50411; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE63011 |
| UEENEEM022A | Attend to breakdowns in hazardous areas — pressurisation | 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; UEENEEI112A; MEM7001B  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE33011; UEE40411; UEE40611; UEE42211; UEE42611; UEE43011; UEE50211; UEE50411; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE63011 |
| 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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE40411; UEE40611; UEE42211; UEE42611; UEE50411; UEE51011; UEE61211; UEE61511; UEE62311 |
| 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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31011; UEE31211; UEE40411; UEE40611; UEE40811; UEE42211; UEE42611; UEE50411; UEE51011; UEE61211; UEE61511 |
| 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):  UEENEEG105A; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE40411; UEE40611; UEE42211; UEE42611; UEE50411; UEE51011; UEE61211; UEE61511 |
| UEENEEM026A | Install explosion-protected equipment and wiring systems — 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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE40411; UEE40611; UEE42211; UEE42611; UEE50411; UEE51011; UEE61211; UEE61511 |
| 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. Examples are (but not limited to):  UEENEEG105A; UEENEEH150A; UEENEEI112A; UEENEEF111A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE33011; UEE40411; UEE40611; UEE42211; UEE42611; UEE43011; UEE50411; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE62211; UEE62311; UEE63011 |
| UEENEEM028A | Maintain equipment in hazardous areas — 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; UEENEEH150A; UEENEEI112A; UEENEEF111A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE33011; UEE40411; UEE40611; UEE42211; UEE42611; UEE43011; UEE50411; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE62211; UEE63011 |
| 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):  UEENEEG105A; UEENEEH150A; UEENEEI112A; UEENEEF111A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE33011; UEE40411; UEE40611; UEE42211; UEE42611; UEE43011; UEE50411; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE63011 |
| 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; UEENEEH150A; UEENEEI112A; UEENEEF111A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31211; UEE33011; UEE40411; UEE40611; UEE42211; UEE42611; UEE43011; UEE50411; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE63011 |
| 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 AQF level 3 or equivalent Example are (but not limited to):  UEENEEG160A; MEM15020C |  | UEE33011; UEE42611; UEE43011; UEE53011; UEE62311 |
| 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):  UEENEEG160A; MEM15020C |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| 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):  UEENEEG160A; MEM15020C |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| 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 not limited to):  UEENEEG160A; MEM15020C |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| 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; E084A; E124A. |  | UEE50411; UEE53011; UEE60611; UEE61211; UEE62311; UEE63011 |
| 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; E084A; E124A. |  | UEE50411; UEE53011; UEE60611; UEE61211; UEE62211; UEE62311; UEE63011 |
| 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 AQF 5 or equivalent. Example are (but not limited to):  C004B; E015B; E084A; E124A. |  | UEE50411; UEE53011; UEE60611; UEE61211; UEE63011 |
| 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):  UEENEEG105A; UEENEEH162A; UEENEEI112A; UEENEEF111A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE40311; UEE40411; UEE40611; UEE42211; UEE42611; UEE50411; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE62311; UEE63011 |
| UEENEEM039A | Conduct testing of hazardous areas installations — gas atmospheres | 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; UEENEEH162A; UEENEEI112A; UEENEEF111A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE40311; UEE40411; UEE40611; UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE62211; UEE63011 |
| 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 AQF 3 or equivalent. Examples are (but not limited to):  UEENEEG105A; UEENEEH162A; UEENEEI112A; UEENEEF111A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE40311; UEE40411; UEE40611; UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE61511 |
| 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; UEENEEI112A; MEM7001B  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE40311; UEE40411; UEE40611; UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE61511 |
| 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; UEENEEH162A; UEENEEI112A; UEENEEF111A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE40311; UEE40411; UEE40611; UEE40811; UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE62211; UEE62311; UEE63011 |
| UEENEEM043A | Conduct detailed inspection of hazardous areas installations - coal mining | 40 | 4 | M023A; or M027A; or (M080A and M054A) or (M080A and G123A)  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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B  Or  M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to):  G125A; I112A;  Or  G122A;  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 |  | UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE61511; UEE62311 |
| 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 AQF 3 or equivalent. Examples are (but not limited to):  UEENEEG105A; UEENEEH150A; UEENEEI112A; UEENEEF114A;  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; I112A; MEM7001B; PMAOPS201B  Or  M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to):  G125A; I112A;  Or  G122A;  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 |  | UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE62211; UEE63011 |
| UEENEEM045A | Conduct detailed inspection of hazardous areas installations - dust atmospheres | 40 | 4 | 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):  UEENEEG105A; UEENEEH150A; UEENEEI112A; UEENEEF114A;  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; I112A; MEM7001B; PMAOPS201B  Or  M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to):  G025B; I112A;  Or  G122A;  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 |  | UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE61511 |
| UEENEEM046A | Conduct detailed inspection of hazardous areas installations - pressurisation | 40 | 4 | M026A; or M030A; 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):  UEENEEG105A; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B  Or  M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to):  G025B; I112A;  Or  G122A;  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 |  | UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE61511 |
| UEENEEM047A | Develop and manage maintenance programs for hazardous areas electrical equipment — coal mining | 20 | 4 | 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):  UEENEEG105A; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B  Or  Competency in designing electrical systems and installations at AQF level 6 or equivalent. Examples are (but not limited to): E015B or G130A or I123A |  | UEE42611; UEE43011; UEE43011; UEE53011; UEE60611; UEE61211; UEE62211; UEE62311; UEE63011 |
| UEENEEM048A | Develop and manage maintenance programs for hazardous areas electrical equipment — gas atmospheres | 20 | 4 | M028A; or (M080A; and E110A)  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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE42611; UEE43011; UEE43011; UEE53011 |
| UEENEEM049A | Develop and manage maintenance programs for hazardous areas electrical equipment — dust atmospheres | 20 | 4 | M029A; or (M080A; and E110A)  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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE42611; UEE43011; UEE43011; UEE53011 |
| UEENEEM050A | Develop and manage maintenance programs for hazardous areas electrical equipment — pressurisation | 20 | 4 | M030A; or (M080A; and E110A)  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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE42611; UEE43011; UEE43011; UEE53011 |
| UEENEEM052A | Classify hazardous areas — gas atmospheres | 40 | 6 | Competencies in gathering and analysing technical data at AQF6 or equivalent Examples are (but not limited to):  E071B; E075B; R002B |  | UEE60611; UEE61211; UEE62111; UEE62211; UEE63011 |
| UEENEEM053A | Classify hazardous areas — dust atmospheres | 40 | 6 | Competencies in gathering and analysing technical data at AQF6 or equivalent Examples are (but not limited to):  E071B; E075B; R002B |  | UEE60611; UEE61211; UEE61511; UEE62111; UEE63011 |
| 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; I112A;  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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE42611; UEE43011; UEE53011; UEE60611; UEE61211; UEE62211; UEE63011 |
| 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):  G125A; I112A;  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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE42611; UEE43011; UEE53011 |
| 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):  G125A; I112A;  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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE42611; UEE43011; UEE53011 |
| 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):  E115A; G130A; I123A |  | UEE60611; UEE61211; UEE61511; UEE62111; UEE62211; UEE63011 |
| 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):  E115A; G130A; I123A |  | UEE60611; UEE61211; UEE61511; UEE62111; UEE63011 |
| 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):  E115A; G130A; I123A |  | UEE60611; UEE61211; UEE61511; UEE62111; UEE63011 |
| UEENEEM060A | Carry out overhaul and repair of explosion-protected equipment — coal mining | 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):  G129A; G164A; MEM7001B |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| 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):  G129A; G164A; MEM7001B |  | UEE33011; UEE42611;UEE43011; UEE53011 |
| 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):  G129A; G164A; MEM7001B |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| 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):  G129A; G164A; MEM7001B |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| UEENEEM064A | Conduct audit of hazardous areas installations — coal mining | 60 | 5 | Competency in engineering auditing/evaluation AQF 5 or equivalent. Examples are (but not limited to):  G131A; G160A; |  | UEE50411; UEE53011; UEE60611; UEE61211; UEE62311; UEE63011 |
| 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):  G131A; G160A; |  | UEE50411; UEE53011; UEE60611; UEE61211; UEE62211; UEE63011 |
| 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):  G131A; G160A; |  | UEE50411; UEE53011; UEE60611; UEE61211; UEE63011 |
| 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; E115A; E116A; E124A.  And  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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B  Or  M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to):  G025B; I112A;  Or  G122A;  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):  G131A; G160A; |  | UEE50411; UEE53011; UEE60611; UEE61211; UEE62311; UEE63011 |
| 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; E115A; E116A; E124A.  And  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; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B  Or  M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to):  G125A; I112A;  Or  G122A;  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):  G131A; G160A; |  | UEE50411; UEE53011; UEE60611; UEE61211; UEE61511; UEE62111; UEE62211; UEE63011 |
| 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; E115A; E116A; E124A.  And  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):  UEENEEG105A; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B  Or  M024A; or competencies in planning electrical / instrument installations at AQF level 4 or equivalent Examples are (but not limited to):  G125A; I112A;  Or  G122A;  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):  G131A; G160A; |  | UEE50411; UEE53011; UEE60611; UEE61211; UEE63011 |
| UEENEEM070A | Repair reeling, trailing and flexible cables | 60 | 2 | None |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| UEENEEM071A | Test reeling, trailing and flexible cables | 60 | 2 | None |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| UEENEEM072A | Inspect and fit plugs/couplers for reeling, trailing and flexible cables | 60 | 2 | None |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| UEENEEM073A | Verify compliance of repaired reeling, trailing and flexible cables | 60 | 3 | M070A; M071A; M072A |  | UEE33011; UEE42611; UEE43011; UEE53011 |
| UEENEEM074A | Plan electrical installations in hazardous areas — Coal mining | 20 | 4 | M023A Competencies in planning general electrical/instrumentation installations at AQF4 or equivalent. Examples are (but not limited to): G025B or I112B  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):  UEENEEG105A; UEENEEH150A; UEENEEI112A; UEENEEF104A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE42611; UEE43011; UEE53011; UEE62311 |
| UEENEEM075A | Design explosion-protected electrical systems — Coal mining | 20 | 6 | Competency in designing electrical systems and installations at AQF level 6 or equivalent. Examples are (but not limited to): E115A or G030B or I123A |  | UEE60611; UEE61211; UEE61511; UEE62111; UEE63011 |
| 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 |  | UEE30811; UEE31211; UEE33011; UEE40411; UEE40611; UEE40911; UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE61511 |
| 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  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; UEENEEH150A; UEENEEI112A; UEENEEF114A;  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; I112A; MEM7001B; PMAOPS201B |  | UEE30811; UEE31011; UEE31211; UEE33011; UEE40411; UEE40611; UEE40811; UEE40911; UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE61511 |
| UEENEEM078A | Manage compliance of hazardous areas | 20 | 4 | Competency in general plant management at AQF level 4 Example is (but not limited to) PMASUP410A |  | UEE42211; UEE42611; UEE43011; UEE51011; UEE53011; UEE60611; UEE61211; UEE61511; UEE62211; UEE62311; UEE63011 |
| UEENEEM079A | Design of gas detection systems | 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):  E115A; G130A; I123A |  | UEE60611; UEE61211; UEE61511; UEE62111; UEE63011 |
| 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 operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to)  G105A; I112A; MEM7001B; PMAOPS201B | UEE42611 | UEE30811; UEE31011; UEE31211; UEE33011; UEE40311; UEE40411; UEE40611; UEE40811; UEE40911; UEE42211; UEE43011; UEE43211; UEE51011; UEE53011; UEE60611; UEE61111; UEE61211; UEE61511; UEE62211; UEE62311; UEE63011 |

### N - Rail units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEN101A | Maintain mechanical rail signalling equipment and infrastructure | 20 | 4 | E101A |  | UEE41211 |
| 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; | UEE41211 | UEE30811 |
| 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; | UEE41211 | UEE30811 |
| UEENEEN104A | Test copper rail signalling cables | 20 | 3 | N121A; N102A; G063A; G106A; G102A; G101A; E107A; E104A; E102A; E101A.  and work place requirements in ‘Work site protection’ have been acquired. | UEE41211 | UEE30811 |
| 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; | UEE41211 |  |
| UEENEEN106A | Install and maintain non-vital screen based control systems | 20 | 4 | E101A and work place requirements in ‘Work site protection’ have been acquired. |  | UEE41211 |
| 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; | UEE41211 |  |
| 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; | UEE41211 |  |
| 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; G106A; G107A; G108A; G109A; | UEE41211 |  |
| UEENEEN110A | Install and maintain non-vital telemetry systems | 40 | 4 | E101A and work place requirements in ‘Work site protection’ have been acquired. |  | UEE41211 |
| 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; | UEE41211 |  |
| 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; G106A; G107A; G108A; G109A; | UEE41211 |  |
| 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; |  | UEE41211 |
| UEENEEN116A | Maintain electronic and microprocessor-based remote control systems | 20 | 4 | Relevant work place requirements in ‘Work site protection’ have been acquired. | UEE41211 |  |
| 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; | UEE41211 |  |
| 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; | UEE41211 | UEE30811 |
| UEENEEN126A | Develop rail signalling system maintenance programs | 20 | 4 | Relevant work place requirements in ‘Work site protection’ have been acquired. |  | UEE41211 |
| UEENEEN127A | Decommission electrical and electro-mechanical rail signalling from service | 20 | 4 | Relevant work place requirements in ‘Work site protection’ have been acquired. |  | UEE41211 |
| UEENEEN128A | Test and commission rail power equipment | 20 | 4 | Relevant work place requirements in ‘Work site protection’ have been acquired. |  | UEE41211 |

### P - Restricted units

| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| --- | --- | --- | --- | --- | --- | --- |
| UEENEEP010A | Disconnect - reconnect appliances connected to low voltage installation wiring | 60 | 3 | E101A  Competencies needed for emergency services and equipment repair. |  | UEE30911 |
| UEENEEP011A | Disconnect - reconnect neon signs connected to low voltage installation wiring | 60 | 3 | E101A  Competencies needed for emergency services and equipment repair. |  |  |
| UEENEEP012A | Disconnect / reconnect composite appliances connected to low voltage installation wiring | 60 | 3 | E101A  Competencies needed for emergency services and equipment repair. | UEE32111; UEE32211; UEE42711; UEE42811; UEE42911; UEE51211; UEE62511 |  |
| UEENEEP013A | Disconnect - reconnect control devices connected to low voltage installation wiring | 60 | 3 | E101A  Competencies needed for emergency services and equipment repair. | UEE30711; UEE31211; UEE42211; UEE51011; UEE61511 | UEE31011 |
| UEENEEP014A | Disconnect - reconnect water heaters connected to low voltage installation wiring | 60 | 3 | E101A  Competencies needed for emergency services and equipment repair. |  |  |
| UEENEEP015A | Disconnect - reconnect motors connected to low voltage installation wiring | 60 | 3 | E101A  Competencies needed for emergency services and equipment repair. | UEE30611 |  |
| UEENEEP016A | Locate and rectify faults in low voltage appliances using set procedures | 20 | 3 | P010A; E101A |  |  |
| UEENEEP017A | Locate and rectify faults in low voltage composite appliances using set procedures | 20 | 3 | P012A; E101A | UEE32111; UEE32211; UEE42711; UEE42811; UEE42911; UEE51211; UEE62511 |  |
| UEENEEP018A | Locate and rectify faults in low voltage control devices using set procedures | 20 | 3 | P013A; E101A |  | UEE30711; UEE31011 |
| UEENEEP019A | Locate and rectify faults in low voltage water heaters using set procedures | 20 | 3 | P014A; E101A |  |  |
| UEENEEP020A | Locate and rectify faults in low voltage motors using set procedures | 20 | 3 | P015A; E101A |  | UEE30611 |
| UEENEEP021A | Disconnect - reconnect explosion-protected appliances and control devices connected to low voltage installation wiring | 60 | 3 | P013A; E101A |  |  |
| UEENEEP022A | 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. |  |  |
| UEENEEP023A | HV Flexible Cables and Plugs | 40 | 3 | P025A;  P024A; E101A |  |  |
| UEENEEP024A | Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply | 20 | 2 | E101A | UEE32111; UEE32211; UEE42711; UEE42811; UEE42911; UEE51211; UEE62511 | UEE20111; UEE21311; UEE21711; UEE22011; UEE22111; UEE30611; UEE30911; UEE32011; UEE41611; UEE43211; UEE61111; UEE62011 |
| UEENEEP025A | Attach cords, cables and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply | 20 | 3 | P024A; E101A | UEE32111; UEE32211; UEE42711; UEE42811; UEE42911; UEE51211; UEE62511 | UEE30611; UEE30911; UEE32011; UEE40711; UEE41611; UEE43211; UEE50511; UEE60211; UEE61111; |
| UEENEEP026A | Conduct in-service safety testing of electrical cord connected equipment and cord assemblies | 20 | 2 | E101A |  | UEE20111; UEE20811; UEE21311; UEE32011; UEE41611; UEE43211; UEE61111; UEE62011 |

### R - Research units

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Unit Code | Unit Title | Wtg. Pts | AQF Level | Prerequisite/s | Qualification Core | Qualification Elective |
| UEENEER001B | Contribute to the planning of a research project | 120 | 5 | None | UEE50811 |  |
| UEENEER002B | Contribute to the conduct of a research project | 120 | 5 | None | UEE50811 |  |
| UEENEER003B | Contribute to the development of a product/application/ service | 120 | 5 | None | UEE50811 |  |
| UEENEER004B | Contribute to the trial of a product/application/ service | 120 | 5 | None | UEE50811 |  |
| UEENEER005B | Contribute to Intellectual Property management | 120 | 5 | None |  | UEE50811 |
| UEENEER006B | Contribute to the commercialisation of products/applications/ services | 120 | 5 | None |  | UEE50811 |

### Imported Units

|  |  |  |  |
| --- | --- | --- | --- |
| Unit Code | Unit Title | | Weighting Points |
| BSBCUS401B | | 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 |
| CPCCOHS1001A | | Work safely in the construction industry | 10 |
| CPCPCM2043A | | Carry out WHS requirements | 10 |
| CPCPMS3035A | | Install and test ducting systems | 10 |
| CPPBDN5013A | | Develop and collaborate on building information models for small-scale building design projects | 100 |
| HLTAID001 | | Provide cardiopulmonary resuscitation | 10 |
| HLTAID003 | | Provide 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 |
| MSS402001A | | Apply competitive systems and practices | 20 |
| MSS402020A | | Apply quick changeover procedures | 20 |
| MSS402021A | | Apply Just in Time procedures | 20 |
| MSS402040A | | Apply 5S procedures | 20 |
| MSS402080A | | Undertake root cause analysis | 20 |
| MSS402081A | | 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 | 30 |
| CPPFES2043A | | Prevent ozone depleting substance and synthetic greenhouse gas emissions | 10 |
| RIIRAI609D | | Establish and maintain electrical installations, reticulation and protection system | 120 |
| RIIRIS601D | | Establish and maintain the risk management system | 100 |
| RIIWHS202D | | Enter and work in confined spaces | 30 |
| RIIWHS204D | | Work safely at heights | 20 |
| RIIWHS205D | | Control traffic with stop-slow bat | 10 |
| TLILIC2001A | | Licence to operate a forklift truck | 40 |
| TLIS2004A | | Install and maintain rail bonding systems | 40 |
| UEPOPS202B | | Apply Quality Systems To Work | 20 |
| UEPOPS337B | | Maintain Quality Systems within the Team | 20 |
| UEPOPS416B | | 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 |
| UETTDRSB23A | | Install and maintain substation direct current systems | 30 |
| UETTDRSB29A | | Maintain capacitor bank equipment for voltage regulation | 40 |
| 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 PackageV1. 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 | | | | |
| UEENEEA101A | Assemble electronic components | UEENEEA001B | Assemble electronic apparatus | E |
| UEENEEA102A | Select electronic components for assembly | UEENEEA002B | Select electronic components | E |
| UEENEEA103A | Set up and check electronic component assembly machines | UEENEEA003B | Set up and check electronic component placement machines | E |
| UEENEEA104A | Modify electronic sub assemblies | UEENEEA004B | Rework electronic sub assemblies | E |
| UEENEEA105A | Conduct quality and functional tests on assembled electronic apparatus | UEENEEA005B | Conduct functional and quality tests on assembled electronic apparatus | E |
| UEENEEA106A | Use lead-free soldering techniques | UEENEEA006B | Apply lead-free soldering techniques | E |
| UEENEEA107A | Make up wiring looms for internal wiring of appliances and machinery |  | New Unit |  |
| UEENEEA110A | Assemble, mount and connect control gear and switchgear | UEENEEA010B | Assemble, mount and connect switchgear and controlgear | E |
| UEENEEA112A | Fabricate and assemble bus bars | UEENEEA012B | Make up and assemble bus bars | E |
| UEENEEA113A | Mount and wire control panel equipment | UEENEEA013B | Assemble and wire control panels | E |
| B – Broadcast technology units | | | | |
| UEENEEB101A | Operate and maintain amateur radio communication stations | UEENEEB001B | Operate and maintain an amateur radio communication station | E |
| C – Commercial units | | | | |
|  | Removed | UEENEEC015B | Participate in custom electronic installations work and competency development activities |  |
|  | Removed | UEENEEC028B | Participate in hazardous areas work and competency development activities |  |
|  | Removed | UEENEEC029B | Participate in explosion-protected equipment overhaul work and competency development activities |  |
| D – Computerised Systems units | | | | |
| UEENEED101A | Use computer applications relevant to a workplace | UEENEED001B | Use basic computer applications relevant to a workplace | E |
| UEENEED102A | Assemble, set-up and test computing devices | UEENEED002B | Assemble, set up and test personal computers | E |
| UEENEED103A | Evaluate and modify object oriented code programs | UEENEED003B | Evaluate and modify programs written in object oriented code | E |
| UEENEED104A | Use engineering applications software on personal computers | UEENEED004B | Use engineering applications software | E |
|  | Removed | UEENEED005B | Enter and verify operating instructions in microprocessor equipped devices |  |
|  | Removed | UEENEED007B | Develop, enter and verify programs for programmable logic controllers using ladder instruction set |  |
|  | Removed | UEENEED008B | Develop, enter and verify programs in Supervisory Control and Data Acquisition systems |  |
|  | Removed | UEENEED009B | Develop, enter and verify programs for industrial control systems using high level instructions |  |
| UEENEED110A | Set up, create and implement content for a web server | UEENEED010B | Set up and create content for a web server | E |
| UEENEED111A | Develop, implement and test object oriented code | UEENEED011B | Develop object oriented code | E |
| UEENEED112A | Support computer hardware and software for engineering applications | UEENEED012B | Support computer hardware and software | E |
| UEENEED113A | Install and administer Unix based networked computers | UEENEED013B | Install and administer Unix based computers | E |
| UEENEED114A | Design and manage enterprise computer networks | UEENEED014B | Design and manage enterprise networks | E |
| UEENEED115A | Administer computer networks | UEENEED015B | Administer user networks | E |
| UEENEED116A | Develop computer network services | UEENEED016B | Develop network services | E |
| UEENEED117A | Install and configure network systems for internetworking | UEENEED017B | Install and configure Internetworking systems | E |
| UEENEED118A | Design and implement network systems for internetworking | UEENEED018B | Design and implement Internetworking systems | E |
| UEENEED119A | Design and implement advanced routing for internetworking systems | UEENEED019B | Design and implement Internetworking systems — advanced routing | E |
| UEENEED120A | Design and implement remote access for Internetworking systems | UEENEED020B | Design and implement Internetworking systems — remote access | E |
| UEENEED121A | Design and implement multi-layer switching for Internetworking systems | UEENEED021B | Design and implement Internetworking systems — multi-layer switching | E |
| UEENEED122A | Design and implement security for Internetworking systems | UEENEED022B | Design and implement Internetworking systems — security | E |
| UEENEED123A | Design and implement wireless LANs/WANs for internetworking systems | UEENEED023B | Design and implement Internetworking systems — wireless LANs/WANs | E |
| UEENEED124A | Integrate multiple computer operating systems on a client server local area network | UEENEED024B | Integrate multiple computer operating systems on a client server network | E |
|  | Removed | UEENEED025B | Design and configure Human-Machine Interface networks |  |
|  | Removed | UEENEED026B | Design a computer based control system |  |
|  | Removed | UEENEED027B | Develop structured programs to control external devices |  |
|  | Removed | UEENEED028B | Develop and test code for microcontroller devices |  |
| UEENEED129A | Develop web pages for engineering applications | UEENEED029B | Develop basic web pages for engineering applications | E |
| UEENEED130A | Select, install, configure and test multimedia components | UEENEED030B | Select, install, configure and test multimedia devices | E |
|  | Removed | UEENEED031B | Develop and validate basic integrated systems |  |
|  | Removed | UEENEED032B | Design integrated systems |  |
|  | Removed | UEENEED033B | Design complex integrated systems |  |
|  | Removed | UEENEED034B | Configure and maintain industrial control system networks |  |
| UEENEED143A | Install and configure a client computer operating system and software | UEENEED043B | Install and configure a computer operating system and software | E |
| UEENEED144A | Commission industrial computer systems | UEENEED044B | Commission computer systems | E |
| UEENEED145A | Modify-redesign of industrial computer systems | UEENEED045B | Modify-redesign of computer system | E |
| UEENEED146A | Set up and configure basic local area network (LAN) | UEENEED046B | Set up and configure basic local area network | E |
| UEENEED148A | Plan industrial computer systems projects | UEENEED048B | Plan computer systems projects | E |
| UEENEED150A | Develop industrial control programs for microcomputer equipped devices | UEENEED050B | Develop control programs for micro-computer equipped devices | E |
| UEENEED151A | Provide programming solution for computer systems engineering problems | UEENEED051B | Provide programming solution for engineering problems | E |
| UEENEED152A | Design embedded controller control systems | UEENEED052B | Design embedded controller systems | E |
| UEENEED153A | Set up, configure and test biometric devices | UEENEED053B | Set up and test biometric devices | E |
| UEENEED154A | Analyse and implement biometric measuring techniques and applications | UEENEED054B | Analyse and implement biometric techniques and applications | E |
| UEENEED155A | Develop and validate biometric equipment/systems installation | UEENEED055B | Develop and validate biometric systems installation instructions | E |
| UEENEED147A | Develop energy sector directory services |  | New Unit |  |
| UEENEED149A | Develop energy sector computer network applications infrastructure |  | New Unit |  |
| E – Cross-discipline units | | | | |
| UEENEEE101A | Apply Occupational Health and Safety regulations, codes and practices in the workplace | UEENEEE001B | Apply OHS practices in the workplace | E |
| UEENEEE102A | Fabricate, assemble and dismantle utilities industry components | UEENEEE002B | Dismantle, assemble and fabricate electrotechnology components | E |
| UEENEEE103A | Solve problems in ELV single path circuits | UEENEEE003B | Solve problems in extra-low voltage single path circuits | E |
| 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) a.c. circuits | UEENEEE019C | Solve problems in multiple path a.c. circuits | E |
| UEENEEE121A | Plan an integrated cabling installation system | UEENEEE021B | Plan an integrated cabling system | E |
| UEENEEE122A | Carry out preparatory energy sector work activities | UEENEEE022B | Carry out preparatory electrotechnology work activities | E |
| UEENEEE123A | Solve basic problems electronic and digital equipment and circuits | UEENEEE023B | Solve basic problems in electronic and digital equipment | E |
| UEENEEE124A | Compile and produce an energy sector detailed report | UEENEEE024C | Compile and produce an electrotechnology report | E |
|  | Removed | UEENEEE025B | Solve problems in complex multiple path circuits |  |
|  | Removed | UEENEEE026B | Provide computational solutions to basic engineering problems |  |
| UEENEEE127A | Use advanced computational processes to provide solutions to energy sector engineering problems | UEENEEE027B | Use advanced computational processes to provide solutions to engineering problems | E |
| UEENEEE128A | Develop engineering solutions to photonic system problems | UEENEEE028B | Develop engineering solutions to photonic problems | E |
| UEENEEE129A | Solve electrotechnical engineering problems | UEENEEE029B | Solve electrotechnical problems | E |
| UEENEEE130A | Provide solutions and report on routine electrotechnology problems | UEENEEE030B | Provide solutions to and report on routine electrotechnology problems | E |
|  | Removed | UEENEEE032B | Document occupational hazards and risks in computer systems |  |
|  | Removed | UEENEEE033B | Document occupational hazards and risks in electrical |  |
|  | Removed | UEENEEE034B | Document occupational hazards and risks in electronics |  |
|  | Removed | UEENEEE035B | Document occupational hazards and risks in instrumentation |  |
|  | Removed | UEENEEE036B | Document occupational hazards and risks in refrigeration and air-conditioning |  |
|  | Removed | UEENEEE037B | Document occupational hazards and risks in electrotechnology |  |
| UEENEEE141A | Use of routine equipment/plant/technologies in an energy sector environment | UEENEEE041B | Use of routine equipment/plant/technologies in an electrotechnology environment | E |
| UEENEEE142A | Produce products for carrying out energy sector work activities | UEENEEE042B | Produce routine products for carrying out electrotechnology work activities | E |
| UEENEEE143A | Produce routine tools/devices for carrying out energy sector work activities | UEENEEE043B | Produce routine tools/devices for carrying out electrotechnology work activities | E |
| UEENEEE144A | Apply technologies and concepts to energy sector work activities | UEENEEE044B | Apply technologies and concepts to electrotechnology work activities | E |
| UEENEEE145A | Apply computation when using equipment/materials/concepts in an energy sector environment | UEENEEE045B | Apply computation when using equipment, materials and concepts in an electrotechnology environment | E |
| UEENEEE146A | Identify effects of energy on machinery and materials in an energy sector environment | UEENEEE046B | Identify affects of energy on machinery and materials in an electrotechnology environment | E |
| UEENEEE147A | Identify building techniques, methods and materials used in energy sector work activities | UEENEEE047B | Identify building techniques, methods and materials used in electrotechnology work activities | E |
| UEENEEE148A | Carry out routine work activities in an energy sector environment | UEENEEE048C | Carry out routine work activities in an electrotechnology environment | E |
| UEENEEE149A | Contribute to the operation of support plant and equipment used in electricity supply industry | UEENEEE049B | Contribute to the operation of support plant and equipment used in electricity supply | E |
| UEENEEE150A | Undertake computations in an energy sector environment | UEENEEE050B | Undertake computations in an electrotechnology environment | E |
| UEENEEE151A | Transport apparatus, equipment and materials | UEENEEE051B | Transport apparatus and materials | E |
| UEENEEE160A | Provide engineering solutions for uses of materials and thermodynamic effects | UEENEEE060B | Provide solutions for uses of materials and thermodynamic effects | E |
| UEENEEE161A | Analyse static and dynamic parameters of electrical equipment | UEENEEE061B | Analyse static and dynamic parameters of equipment | E |
| UEENEEE162A | Select drive components for electrical equipment design | UEENEEE062B | Select drive components for equipment design | E |
| UEENEEE163A | Analyse materials for suitability in electrical equipment | UEENEEE063B | Analyse materials for suitability in equipment | E |
| UEENEEE164A | Design electrical machine drives and production layout plans | UEENEEE064B | Design machine drives and production layout plans | E |
| UEENEEE179A | Identify and select components, accessories and materials for energy sector work activities | UEENEEE079A | Identify and select components, accessories and materials for electrotechnology work activities | E |
| UEENEEE103A | Solve problems in ELV single path circuits |  | New Unit |  |
| UEENEEE131A | Solve problems in ELV circuits for non electrical workers |  | New Unit |  |
| UEENEEE152A | Observe safety practices are followed in the vicinity of isolated electrical cables |  | New Unit |  |
| UEENEEE185A | Write work activity reports |  | New Unit |  |
| UEENEEE190A | Prepare engineering drawings using manual drafting and CAD for electrotechnology/utilities applications |  | New Unit |  |
| UEENEEE191A | Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software |  | New Unit |  |
| UEENEEE192A | Produce detailed electrotechnology /utilities drawings using computer aided design equipment and software |  | New Unit |  |
| F – Data and voice communication units | | | | |
| UEENEEF101A | Install and connect cabling for direct access to telecommunications service |  | New Unit |  |
| UEENEEF102A | Install and maintain cabling for multiple access to telecommunication services | UEENEEF002B | Lay and connect cables for multiple access to telecommunication services | E |
| UEENEEF103A | Install and maintain telecommunication cabling for services in lifts | UEENEEF003B | Install and maintain cabling for telecommunication services in lifts | E |
| UEENEEF104A | Install and modify performance data communication copper cabling | UEENEEF004B | Install and modify performance data communication structured cabling | E |
| UEENEEF105A | Install and modify optical fibre performance data communication cabling | UEENEEF005B | Install and modify performance data communication optical fibre cabling | E |
| UEENEEF106A | Solve problems in voice and data communications circuits | UEENEEF006B | Solve problems in data and voice communications circuits | E |
| UEENEEF107A | Set up and configure the wireless capabilities of communications and data storage devices | UEENEEF007B | Set up the wireless capabilities of communications and data storage devices | E |
| UEENEEF108A | Select and arrange equipment for wireless communication networks | UEENEEF008B | Select and arrange equipment for wireless networks | E |
| UEENEEF109A | Install and connect data and voice communication equipment | UEENEEF009B | Install and connect voice and data communications equipment | E |
| UEENEEF110A | Select and arrange data and voice equipment for local area networks | UEENEEF010B | Select and arrange equipment for local area networks | E |
| UEENEEF111A | Test, report and rectify faults in data and voice installations | UEENEEF011B | Test, report and rectify faults in voice and data installations | E |
| UEENEEF112A | Install aerial telecommunication cables | UEENEEF012B | Install aerial communication cables | E |
| UEENEEF113A | Install underground communication cables | UEENEEF013B | Install below ground communication cables | E |
| UEENEEF114A | Set up and configure basic data communication systems | UEENEEF014B | Set up and configure basic data communications systems | E |
| UEENEEF115A | Assemble and connect telecommunication frames and cabinets | UEENEEF015B | Assemble and connect communication frames and cabinets | E |
|  | Removed | UEENEEF016A | Lay and connect cabling for direct access to telecommunications services |  |
| G – Electrical units | | | | |
| UEENEEG101A | Solve problems in electromagnetic devices and related circuits | UEENEEG001B | Solve problems in electromagnetic circuits | E |
| UEENEEG102A | Solve problems in low voltage a.c. circuits | UEENEEG002B | Solve problems in single and three phase low voltage circuits | E |
| UEENEEG103A | Install low voltage wiring and accessories | UEENEEG003B | Install wiring and accessories for low voltage circuits | E |
| UEENEEG104A | Install appliances, switchgear and associated accessories for low voltage electrical installations | UEENEEG004B | Install low voltage electrical apparatus and associated equipment | E |
| UEENEEG105A | Verify compliance and functionality of low voltage general electrical installations | UEENEEG005B | Verify compliance and functionality of general electrical installations | E |
| UEENEEG107A | Select wiring systems and cables for low voltage general electrical installations | UEENEEG007B | Select and arrange equipment for general electrical installations | E |
| UEENEEG108A | Trouble-shoot and repair faults in low voltage electrical apparatus and circuits | UEENEEG008B | Find and repair faults in electrical apparatus and circuits | E |
| UEENEEG109A | Develop and connect electrical control circuits | UEENEEG009B | Develop and connect control circuits | E |
| UEENEEG110A | Find and repair faults in LV d.c. electrical apparatus and circuits | UEENEEG010B | Find and repair faults in d.c. electrical apparatus and circuits | E |
| UEENEEG111A | Carry out basic repairs to electrical components and equipment | UEENEEG011B | Carry out basic repairs to electrical apparatus | E |
|  | Removed | UEENEEG012B | Solve fundamental problems in electrical systems |  |
| UEENEEG113A | Install and maintain emergency safety systems | UEENEEG013B | Install and maintain emergency systems | E |
|  | Removed | UEENEEG015B | Find and rectify faults in energy supply network equipment |  |
| UEENEEG116A | Diagnose and rectify faults in traction lift systems | UEENEEG016B | Diagnose and rectify faults in lift systems | E |
| UEENEEG118A | Maintain operation of electrical mining equipment and systems | UEENEEG018B | Maintain operation of electrical mining equipment | E |
| UEENEEG119A | Maintain operation of electrical marine equipment and systems | UEENEEG019B | Maintain operation of electrical marine equipment | E |
| UEENEEG120A | Select and arrange equipment for special LV electrical installations | UEENEEG020B | Select and arrange equipment for special electrical installations | E |
| UEENEEG121A | Verify compliance and functionality of special LV electrical installations | UEENEEG021B | Verify compliance and functionality of special electrical installations | E |
| UEENEEG122A | Conduct compliance inspection of single phase LV electrical installations | UEENEEG022B | Conduct compliance inspection of single phase electrical installations | E |
| UEENEEG123A | Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase | UEENEEG023B | Conduct compliance inspection of electrical installations with demand exceeding 100 A per phase | E |
| UEENEEG124A | Conduct compliance inspection of special LV electrical installations | UEENEEG024B | Conduct compliance inspection of special electrical installations | E |
| UEENEEG125A | Plan electrical installations with a low voltage demand up to 400 A per phase | UEENEEG025B | Plan electrical installations with a LV demand up to 400 A per phase | E |
| UEENEEG126A | Install and maintain field power and distribution systems with a low voltage demand up to 200 A per phase | UEENEEG026B | Install and maintain field power and distribution systems with a LV demand up to 200 A per phase | E |
| UEENEEG127A | Design electrical installations with a low voltage demand greater than 400 A per phase | UEENEEG027B | Design electrical installations with a LV demand greater than 400 A per phase | E |
| UEENEEG128A | Plan low voltage switchboard and control panel layouts | UEENEEG028B | Plan switchboard and control panel layouts | E |
| UEENEEG129A | Overhaul and repair major switchgear and controlgear | UEENEEG029B | Overhaul and repair major switchgear/controlgear | E |
| UEENEEG130A | Design switchboards rated for high fault levels (greater than 400 A) | UEENEEG030B | Design switchboards rated for high fault levels | E |
| UEENEEG131A | Evaluate performance of low voltage electrical apparatus | UEENEEG031B | Evaluate performance of electrical apparatus | E |
| UEENEEG132A | Carry out low voltage electrical field testing and report findings | UEENEEG032B | Carry out electrical field testing and report findings | E |
|  | Removed | UEENEEG034B | Perform high voltage field switching to a given schedule |  |
|  | Removed | UEENEEG035B | Diagnose and rectify faults in a.c. motor drive systems |  |
|  | Removed | UEENEEG036B | Diagnose and rectify faults in d.c. motor drive systems |  |
|  | Removed | UEENEEG037B | Diagnose and rectify faults in energy supply apparatus |  |
|  | Removed | UEENEEG038B | Diagnose and rectify faults in electrical energy distribution systems |  |
|  | Removed | UEENEEG039B | Diagnose and rectify faults in distributed generation systems |  |
|  | Removed | UEENEEG040B | Develop engineering solutions for energy supply power transformer problems |  |
|  | Removed | UEENEEG041B | Diagnose and rectify faults in servo drive systems |  |
|  | Removed | UEENEEG042B | Diagnose and rectify faults in electrical energy supply transmission systems |  |
| UEENEEG143A | Develop engineering solution for synchronous machine and control problems | UEENEEG043B | Develop engineering solution for synchronous machine problems | E |
| UEENEEG144A | Develop engineering solutions for d.c. machine and control problems | UEENEEG044B | Develop engineering solutions for d.c. machine problems | E |
| UEENEEG145A | Develop engineering solutions for induction machine and control problems | UEENEEG045B | Develop engineering solutions for induction motor problems | E |
|  | Removed | UEENEEG046B | Develop engineering solutions for energy supply system protection problems |  |
|  | Removed | UEENEEG047B | Provide computational solutions to power engineering problems |  |
|  | Removed | UEENEEG048B | Solve problems in complex multiple path power circuits |  |
|  | Removed | UEENEEG049B | Solve problems in complex polyphase power circuits |  |
| UEENEEG150A | Wind electrical coils | UEENEEG050B | Wind coils | E |
| UEENEEG151A | Place and connect electrical coils | UEENEEG051B | Place and connect coils | E |
| UEENEEG152A | Rewind single phase machines | UEENEEG052B | Rewind single phase induction machines | E |
| UEENEEG153A | Rewind three phase low voltage induction machines | UEENEEG053B | Rewind three phase induction machines rated for low voltage | E |
| UEENEEG154A | Rewind LV direct current machines | UEENEEG054B | Rewind direct current machines rated for low voltage | E |
| UEENEEG155A | Rewind HV three phase induction machines rated for voltages to 3.3 kV | UEENEEG055B | Rewind three phase induction machines rated for high voltage to 3.3 kV | E |
| UEENEEG156A | Rewind HV three phase induction machines rated for voltages above 3.3 kV | UEENEEG056B | Rewind three phase induction machines rated for high voltage above 3.3 kV | E |
| UEENEEG157A | Conduct electrical tests on LV electrical machines | UEENEEG057B | Conduct electrical tests on low voltage electrical machines | E |
| UEENEEG158A | Conduct electrical tests on HV electrical machines | UEENEEG058B | Conduct electrical tests on high voltage electrical machines | E |
| UEENEEG159A | Conduct mechanical tests on electrical machines and components | UEENEEG059B | Conduct mechanical tests on electrical machines | E |
| UEENEEG160A | Evaluate performance of LV electrical machines | UEENEEG060B | Evaluate performance of electrical machines | E |
| UEENEEG161A | Design and develop modifications to LV electrical machines | UEENEEG061B | Design and develop modifications to electrical machines | E |
| UEENEEG162A | Set up and place LV electrical apparatus and associated circuits into service | UEENEEG062B | Set up and place electrical apparatus and associated circuits into service | E |
| UEENEEG164A | Repair and maintain mechanical components of electrical machines | UEENEEG064B | Repair mechanical components of electrical machines | E |
| UEENEEG165A | Maintain and service traction lifts systems and equipment | UEENEEG065B | Maintain and service traction lifts | E |
| UEENEEG166A | Install and maintain escalators, moving walks and treadways | UEENEEG066B | Installation and maintenance of escalators, moving walks and tread ways | E |
| UEENEEG167A | Align and install traction lift equipment | UEENEEG067B | Align and install lift equipment | E |
| UEENEEG168A | Diagnose and rectify faults in complex lift systems | UEENEEG068B | Diagnose and rectify faults in complex lift systems | E |
| UEENEEG169A | Manage large electrical projects | UEENEEG069B | Manage electrical projects | E |
| UEENEEG170A | Plan large electrical projects | UEENEEG070B | Plan electrical projects | E |
|  | Removed | UEENEEG071C | Install and set up interval metering |  |
| UEENEEG172A | Investigate and report on electrical incidents and causes | UEENEEG072C | Investigate and report on electrical incidents | E |
| UEENEEG175A | Develop compliance policies and plans to conduct a electrical contracting business | UEENEEG075A | Develop compliance policies and plans to conduct a contracting business | E |
| UEENEEG177A | Select low voltage power factor correction equipment |  | New Unit |  |
| UEENEEG179A | Develop detailed electrical drawings |  | New Unit |  |
| UEENEEG180A | Develop detailed and complex drawings for electrical systems using CAD systems |  | New Unit |  |
| UEENEEG181A | Provide advice on effective and energy efficient lighting products |  | New Unit |  |
| UEENEEG182A | Supply effective and efficient lighting products for domestic and small commercial applications |  | New Unit |  |
| UEENEEG183A | Provide advice on the application of energy efficient lighting for ambient and aesthetic effect |  | New Unit |  |
| UEENEEG184A | Provide photometric data for illumination system design |  | New Unit |  |
| UEENEEG185A | Select effective and efficient light sources and luminaires for given locations and designs |  | New Unit |  |
| UEENEEG186A | Design effective and efficient lighting for residential and commercial buildings |  | New Unit |  |
| UEENEEG187A | Design effective and efficient lighting for public, open and sports areas |  | New Unit |  |
| UEENEEG188A | Prepare quotations for the supply of effective and efficient lighting products for lighting projects |  | New Unit |  |
| UEENEEG189A | Install and maintain emergency lighting systems |  | New Unit |  |
| UEENEEG197A | Apply currency of safe working practices and compliance verification of electrical installations |  | New Unit |  |
| UEENEEG198A | Apply compliance requirements to all aspects of electrical work |  | New Unit |  |
| UEENEEG199A | Conduct compliance and functional verification of electrical apparatus and existing circuits |  | New Unit |  |
| H – Electronics units | | | | |
| UEENEEH101A | Repair basic computer equipment faults by replacement of modules/sub-assemblies | UEENEEH001B | Carry out basic repairs to computer equipment by replacement of modules/sub-assemblies | E |
| UEENEEH102A | Repairs basic electronic apparatus faults by replacement of components | UEENEEH002B | Carry out basic repairs to electronic apparatus by replacement of components | E |
| UEENEEH103A | Repair routine business equipment faults | UEENEEH003B | Carry out routine repairs to business equipment | E |
| UEENEEH104A | Set up and test residential video/audio equipment | UEENEEH004B | Set up and test residential audio/video equipment | E |
| UEENEEH105A | Verify functionality and compliance of custom electronic installations | UEENEEH005B | Verify compliance and functionality of custom electronic installations | E |
| UEENEEH106A | Assemble and set up fixed video/audio components and systems in buildings and premises | UEENEEH006B | Assemble and set up fixed audio/video components and systems in buildings and premises | E |
| UEENEEH107A | Repair predictable faults in general electronic apparatus | UEENEEH007B | Carry out repairs of predictable faults in general electronic apparatus | E |
| UEENEEH108A | Assemble and install reception antennae and signal distribution equipment | UEENEEH008B | Assemble and erect reception antennae and signal distribution equipment | E |
| UEENEEH109A | Set up and test gaming and game equipment | UEENEEH009B | Set up and test gaming/games equipment | E |
| UEENEEH110A | Install commercial video/audio system components | UEENEEH010B | Install commercial audio/video system components | E |
| UEENEEH111A | Troubleshoot single phase input d.c. power supplies | UEENEEH011B | Troubleshoot d.c. power supplies with single phase input | E |
| UEENEEH112A | Troubleshoot digital sub-systems | UEENEEH012B | Troubleshoot digital subsystems | E |
| UEENEEH113A | Troubleshoot amplifiers in an electronic apparatus | UEENEEH013B | Troubleshoot amplifiers | E |
| UEENEEH114A | Troubleshoot resonance circuits in an electronic apparatus | UEENEEH014B | Troubleshoot frequency dependent circuits | E |
| UEENEEH115A | Develop software solutions for microcontroller based systems | UEENEEH015B | Develop software solutions in microcontroller based systems | E |
| UEENEEH116A | Find and repair microwave amplifier section faults in electronic apparatus | UEENEEH016B | Find and repair faults in the microwave amplifier sections in electronic apparatus | E |
| UEENEEH117A | Carry out repairs of predictable faults in video and audio replay/recording apparatus | UEENEEH017B | Carry out repairs of predictable faults in audio and video replay/recording apparatus | E |
| UEENEEH118A | Fault find and repair electronic apparatus | UEENEEH018B | Find and repair faults in electronic apparatus | E |
| UEENEEH119A | Repair predictable faults in television receivers | UEENEEH019B | Carry out repairs of predictable faults in television receivers | E |
| UEENEEH120A | Fault find and repair gaming and games equipment | UEENEEH020B | Find and repair faults in gaming and games equipment | E |
| UEENEEH121A | Fault find and repair high volume office equipment | UEENEEH021B | Find and repair faults in high volume office equipment | E |
| UEENEEH122A | Fault find and repair remote control apparatus | UEENEEH022B | Find and repair faults in remote control apparatus | E |
| UEENEEH123A | Fault find and repair microwave heating apparatus | UEENEEH023B | Find and repair faults in microwave heating apparatus | E |
| UEENEEH124A | Repair predictable faults in audio components | UEENEEH024B | Carry out repairs of predictable faults in audio components | E |
|  | Removed | UEENEEH025B | Provide solutions to single phase electronic power control problems |  |
|  | Removed | UEENEEH026B | Provide solutions to polyphase electronic power control problems |  |
| UEENEEH127A | Set up and adjust commercial radio frequency (RF) transmission and reception systems | UEENEEH027B | Commission commercial radio frequency (RF) transmission and reception systems | E |
| UEENEEH128A | Install and test microwave antennae and waveguides | UEENEEH028B | Install microwave and antennae and waveguides | E |
| UEENEEH129B | Fault find and repair navigation systems | UEENEEH029B | Diagnose and rectify faults in navigation systems | E |
| UEENEEH130A | Fault find and repair satellite-based surveillance and observation systems | UEENEEH030B | Diagnose and rectify faults in satellite-based surveillance and observation systems | E |
| UEENEEH131A | Fault find and repair radar apparatus and systems | UEENEEH031B | Diagnose and rectify faults in radar apparatus and systems | E |
| UEENEEH132A | Fault find and repair global positioning systems | UEENEEH032B | Diagnose and rectify faults in global positioning systems | E |
| UEENEEH133A | Fault find and repair telecommunication apparatus and systems | UEENEEH033B | Diagnose and rectify faults in telecommunication apparatus and systems | E |
| UEENEEH134A | Fault find and repair electronic medical equipment | UEENEEH034B | Diagnose and rectify faults in electronic medical equipment | E |
| UEENEEH135A | Design custom electronic equipment installations | UEENEEH035B | Design custom electronic installations | E |
| UEENEEH136A | Design commercial video/audio installations | UEENEEH036B | Design commercial audio/video installations | E |
| UEENEEH137A | Program and commission commercial video/audio systems | UEENEEH037B | Program and commission commercial audio/video systems | E |
| UEENEEH138A | Fault find and repair complex power supplies | UEENEEH038B | Find and repair faults in complex power supplies | E |
| UEENEEH139A | Troubleshoot basic amplifier circuits | UEENEEH039B | Troubleshoot basic amplifiers | E |
| UEENEEH140A | Fault find and repair sonar apparatus and systems | UEENEEH040B | Diagnose and rectify faults in sonar apparatus and systems | E |
| UEENEEH141A | Manage computer systems/electronics projects | UEENEEH041B | Manage electronics/computer systems projects | E |
| UEENEEH142A | Solve oscillator problems | UEENEEH042B | Troubleshoot oscillators | E |
|  | Removed | UEENEEH043B | Diagnose and rectify faults in digital subsystems of electronic controls |  |
|  | Removed | UEENEEH044B | Diagnose and rectify faults in analogue circuits and components in electronic control systems |  |
| UEENEEH145A | Develop engineering solutions to analogue electronic problems | UEENEEH045B | Develop solutions to analogue electronic problems | E |
| UEENEEH146A | Solve fundamental electronic communications system problems | UEENEEH046B | Solve fundamental problems in electronic communications systems | E |
| UEENEEH147A | Assess electronic apparatus compliance | UEENEEH047B | Assess compliance of electronic apparatus | E |
| UEENEEH148A | Design and develop advanced digital systems | UEENEEH048B | Design and develop advanced digital systems | E |
| UEENEEH149A | Develop engineering solutions to audio electronic problems | UEENEEH049B | Develop solutions to audio electronic problems | E |
| UEENEEH150A | Assemble and set up basic security systems | UEENEEH050B | Assemble and set up basic wired and wireless security systems | E |
| UEENEEH151A | Install large security systems | UEENEEH051B | Install large wired and wireless security systems | E |
| UEENEEH152A | Enter instructions and test wired and wireless security systems | UEENEEH052B | Enter instructions and test basic wired and wireless security systems | E |
| UEENEEH153A | Program and test large security systems | UEENEEH053B | Program and test large wired and wireless security systems | E |
| UEENEEH154A | Program and commission commercial security systems | UEENEEH054B | Program and commission commercial security alarm systems | E |
| UEENEEH155A | Program and commission commercial access control security systems | UEENEEH055B | Program and commission commercial security access control systems | E |
| UEENEEH156A | Program and commission commercial security closed circuit television systems | UEENEEH056B | Program and commission commercial security closed circuit television (CCTV) systems | E |
| UEENEEH157A | Develop basic plans for integrating security systems | UEENEEH057B | Develop basic integrated security systems plan | E |
| UEENEEH158A | Design integrated security systems | UEENEEH058B | Design integrated security systems for a single site | E |
| UEENEEH159A | Design integrated complex security systems for multiple sites | UEENEEH059B | Design integrated complex security systems | E |
| UEENEEH160A | Plan large electronic projects | UEENEEH060B | Plan electronic projects | E |
| UEENEEH161A | Install fire detection and warning system apparatus | UEENEEH061B | Position and terminate fire detection and warning system apparatus | E |
| UEENEEH162A | Verify compliance and functionality of fire protection system installations | UEENEEH062B | Verify compliance and functionality of fire protection installations | E |
| UEENEEH163A | Enter and verify programs for fire protection systems | UEENEEH063B | Enter and verify programs in preparation for commissioning fire protection systems | E |
| UEENEEH164A | Commission large fire protection systems | UEENEEH064B | Commission commercial fire protection systems | E |
| UEENEEH165A | Troubleshoot fire protection systems | UEENEEH065B | Find and repair faults in fire protection systems | E |
| UEENEEH166A | Troubleshoot microcontroller based hardware systems | UEENEEH066B | Fault find Microcontroller based hardware | E |
| UEENEEH167A | Commission electronics and communications systems | UEENEEH067B | Commission electronics and communications systems | E |
| UEENEEH168A | Modify/redesign of electronics and communications systems | UEENEEH068B | Modify-redesign of electronics and communications system | E |
| UEENEEH169A | Solve problems in basic electronic circuits | UEENEEH069B | Solve problems in electronic circuits | E |
|  | Removed | UEENEEH070B | Terminate and connect components, conductors, wiring and cables for electronic circuits |  |
| UEENEEH171A | Troubleshoot faults in television receivers | UEENEEH071B | Find and repair faults in television receivers | E |
| UEENEEH172A | Troubleshoot communication systems | UEENEEH072C | Find and repair faults in communication systems | E |
| UEENEEH173A | Troubleshoot professional audio reproduction components | UEENEEH073B | Find and repair faults in professional audio reproduction components | E |
| UEENEEH174A | Troubleshoot audio/video recording equipment | UEENEEH074B | Find and repair faults in audio/video recording equipment | E |
| UEENEEH175A | Troubleshooting in security system installations | UEENEEH075B | Find and rectify faults and malfunctions in security system installations | E |
| UEENEEH176A | Diagnose and rectify faults in electronic display circuits | UEENEEH076B | Diagnose and rectify faults in display circuits | E |
| UEENEEH177A | Diagnose and rectify faults in recording and replay equipment | UEENEEH077B | Diagnose and rectify faults in recording and replay apparatus | E |
| UEENEEH178A | Diagnose and rectify faults in camera circuits and equipment | UEENEEH078B | Diagnose and rectify faults in camera circuits | E |
| UEENEEH179A | Diagnose and rectify faults in digital television circuits and apparatus | UEENEEH079B | Diagnose and rectify faults in digital television apparatus | E |
| UEENEEH180A | Diagnose and rectify faults in digital transmission circuits and systems | UEENEEH080B | Diagnose and rectify faults in digital transmission systems | E |
| UEENEEH181A | Design electronic printed circuit boards | UEENEEH081B | Design printed circuit boards | E |
| UEENEEH182A | Develop engineering solutions to RF amplifiers problems | UEENEEH082B | Develop solutions to RF amplifiers problems | E |
| UEENEEH183A | Analyse the performance of wireless-based electronic/communication systems | UEENEEH083B | Analyse the performance of wireless-based electronic systems | E |
| UEENEEH184A | Modify digital signal processing (DSP) based sub-systems | UEENEEH084B | Modify DSP based sub-systems | E |
| UEENEEH185A | Design signal-conditioning subsystems | UEENEEH085B | Design a signal-conditioning subsystem | E |
| UEENEEH186A | Commission satellite and microwave communication systems | UEENEEH086B | Commission microwave and satellite communication systems | E |
| UEENEEH187A | Solve problems in electronic musical equipment circuits | UEENEEH087B | Solve problems in musical equipment circuits | E |
| UEENEEH188A | Design and develop electronics/ computer systems projects | UEENEEH088B | Design and develop electronics/computer systems project | E |
| UEENEEH190A | Provide engineering solutions to air traffic control system problems | UEENEEH090A | Provide solutions to air traffic control system problems | E |
| UEENEEH191A | Diagnose and rectify faults in air navigation circuits and systems | UEENEEH091A | Diagnose and rectify faults in air navigation systems | E |
| UEENEEH192A | Develop solutions for air surveillance apparatus and systems | UEENEEH092A | Develop engineering solutions for air surveillance apparatus and systems | E |
| UEENEEH189A | Provide Gate Array solutions for complex electronics systems |  | New Unit |  |
| I – Instrumentation and control units | | | | |
|  | Removed | UEENEEI001B | Install and set up transducers and sensing devices |  |
| UEENEEI102A | Solve problems in pressure measurement components and systems | UEENEEI002B | Solve problems in pressure measurement systems | E |
| UEENEEI103A | Solve problems in density/level measurement components and systems | UEENEEI003B | Solve problems in density/level measurement systems | E |
| UEENEEI104A | Solve problems in flow measurement components and systems | UEENEEI004B | Solve problems in flow measurement systems | E |
| UEENEEI105A | Solve problems in temperature measurement components and systems | UEENEEI005B | Solve problems in temperature measurement systems | E |
| UEENEEI106A | Set up and adjust PID control loops | UEENEEI006B | Solve problems in process controllers, transmitters and converters | E |
| UEENEEI107A | Install instrumentation and control cabling and tubing | UEENEEI007C | Install process instrumentation and control cabling and tubing | E |
| UEENEEI108A | Install instrumentation and control apparatus and associated equipment | UEENEEI008C | Install process control apparatus and associated equipment | E |
| UEENEEI118A and UEENEEI131A UEENEEI132A UEENEEI133A | 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 | UEENEEI009B | Set up process measuring and control instruments | E |
| UEENEEI110A | Set up and adjust advanced PID process control loops | UEENEEI010B | Set up and adjust process control loops | E |
| UEENEEI111A | Find and rectify faults in process final control elements | UEENEEI011B | Find and rectify faults in process control valve and associated equipment | E |
| UEENEEI112A | Verify compliance and functionality of instrumentation and control installations | UEENEEI012B | Verify compliance and functionality of process control installations | E |
| UEENEEI113A | Setup and configure Human-Machine Interface (HMI) and industrial networks | UEENEEI013B | Select equipment for process control systems | E |
| UEENEEI114A | Trouble shoot process control systems | UEENEEI014B | Find and rectify faults in process control systems | E |
| UEENEEI115A | Trouble shooting in medical equipment control systems | UEENEEI015B | Find and rectify faults in medical equipment control systems | E |
| UEENEEI117A | Calibrate, adjust and test measuring instruments | UEENEEI017B | Calibrate and test measuring instruments | E |
| UEENEEI119A | Set up industrial field control devices | UEENEEI019B | Set up field control devices | E |
| UEENEEI120A | Provide solutions to problems in industrial control systems | UEENEEI020B | Provide solutions to problems in basic industrial control systems | E |
| UEENEEI121A | Trouble shoot in measuring and analysis systems | UEENEEI021B | Find and repair faults in measuring and analysis systems | E |
| UEENEEI122A | Assist in commissioning process and instrumentation control systems | UEENEEI022B | Assist in commissioning process control systems | E |
| UEENEEI123A | Design electronic control systems | UEENEEI023B | Design electronic control systems | E |
| UEENEEI125A | Provide solutions to fluid circuit operations | UEENEEI025B | Provide solutions to fluid circuit operations | E |
| UEENEEI126A | Provide solutions to pneumatic/ hydraulic system operations | UEENEEI026B | Provide solutions to pneumatic/hydraulic system operations | E |
| UEENEEI127A | Analyse complex electronic circuits controlling fluids | UEENEEI027B | Analyse complex electronic circuits controlling fluids | E |
| UEENEEI128A | Set up and configure controls on complex fluid systems | UEENEEI028B | Set up controls on complex fluid systems | E |
| UEENEEI129A | Set up electronically controlled mechanically operated complex systems | UEENEEI029B | Set up electronically controlled mechanically operated complex systems | E |
| UEENEEI130A | Set up electronically controlled robotically operated complex systems | UEENEEI030B | Set up electronically controlled robotically operated complex systems | E |
| UEENEEI131A UEENEEI132A UEENEEI133A and UEENEEI118A | 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 | UEENEEI009B | Set up process measuring and control instruments | E |
| UEENEEI134A | Manage instrumentation and control projects | UEENEEI034B | Manage control projects | E |
| UEENEEI135A | Plan instrumentation and control projects | UEENEEI035B | Plan control projects | E |
| UEENEEI136A | Manage automated control systems projects | UEENEEI036B | Manage automated systems projects | E |
| UEENEEI137A | Plan automated and control systems projects | UEENEEI037B | Plan automated systems projects | E |
| UEENEEI138A | Provide solutions to extra low voltage (ELV) electro-pneumatic control systems and drives | UEENEEI038A | Provide solutions to ELV electro-pneumatic control systems and drives | E |
| UEENEEI140A | Plan the electrical installation of integrated systems | UEENEEI040A | Plan the installation of integrated systems | E |
| UEENEEI141A | Develop electrical integrated systems | UEENEEI041A | Develop integrated systems | E |
| UEENEEI142A | Develop an electrical integrated system interface for access through a touch screen | UEENEEI042A | Develop an integrated system interface for access through a touch screen | E |
| UEENEEI143A | Develop access control of electrical integrated systems using logic-based programming tools | UEENEEI043A | Develop access control of integrated systems using logic-based programming tools | E |
| UEENEEI144A | Develop interfaces for multiple access methods to monitor, schedule and control an electrical integrated system | UEENEEI044A | Develop interfaces for multiple access methods to monitor, schedule and control an integrated system | E |
| UEENEEI101A | Use instrumentation drawings, specification, standards and equipment manuals |  | New Unit |  |
| UEENEEI116A | Assemble, enter and verify operating instructions in microprocessor equipped devices |  | New Unit |  |
| UEENEEI124A | Fault find and repair analogue circuits and components in electronic control systems |  | New Unit |  |
| UEENEEI139A | Diagnose and rectify faults in digital controls systems |  | New Unit |  |
| UEENEEI145A | Diagnose and rectify faults in a.c. motor drive systems |  | New Unit |  |
| UEENEEI146A | Diagnose and rectify faults in d.c. motor drive systems |  | New Unit |  |
| UEENEEI147A | Diagnose and rectify faults in servo drive systems |  | New Unit |  |
| UEENEEI148A | Solve problems in single phase electronic power control circuits |  | New Unit |  |
| UEENEEI149A | Solve problems in polyphase electronic power control circuits |  | New Unit |  |
| UEENEEI150A | Develop, enter and verify discrete control programs for programmable controllers |  | New Unit |  |
| UEENEEI151A | Develop, enter and verify word and analogue control programs for programmable logic controllers. |  | New Unit |  |
| UEENEEI152A | Develop, enter and verify programs in Supervisory Control and Data Acquisition systems |  | New Unit |  |
| UEENEEI153A | Design and configure Human-Machine Interface (HMI) networks |  | New Unit |  |
| UEENEEI154A | Design and use advanced programming tools PC networks and HMI Iinterfacing |  | New Unit |  |
| UEENEEI155A | Develop structured programs to control external devices |  | New Unit |  |
| UEENEEI156A | Develop and test code for microcontroller devices |  | New Unit |  |
| UEENEEI157A | Configure and maintain industrial control system networks |  | New Unit |  |
| J – Refrigeration and Air Conditioning units | | | | |
|  | Removed | UEENEEJ002B | Prepare refrigerant tubing and fittings |  |
|  | Removed | UEENEEJ003B | Determine the basic operating conditions of vapour compression systems |  |
|  | Removed | UEENEEJ004B | Determine the basic operating conditions of air conditioning systems |  |
|  | Removed | UEENEEJ005B | Position, assemble and start up split air conditioning systems |  |
|  | Removed | UEENEEJ006B | Install pipework for refrigeration and air conditioning systems |  |
|  | Removed | UEENEEJ007B | Install refrigeration and air conditioning systems, major components and associated equipment |  |
|  | Removed | UEENEEJ008B | Recover, pressure and leak test, evacuate and charge refrigerants |  |
|  | Removed | UEENEEJ009B | Verify compliance and functionality of refrigeration and air conditioning installations |  |
|  | Removed | UEENEEJ010B | Select refrigerant pipe/tube, accessories and associated controls |  |
|  | Removed | UEENEEJ011B | Diagnose and rectify faults in refrigeration and air conditioning systems and components |  |
|  | Removed | UEENEEJ013B | Commission refrigeration and air conditioning systems |  |
|  | Removed | UEENEEJ015B | Solve problems in beverage dispensers |  |
|  | Removed | UEENEEJ018B | Solve problems in post mix refrigeration systems |  |
|  | Removed | UEENEEJ019B | Solve problems in ice making systems |  |
|  | Removed | UEENEEJ020B | Solve problems in industrial refrigeration systems |  |
|  | Removed | UEENEEJ021B | Monitor and adjust energy management systems on refrigeration systems |  |
|  | Removed | UEENEEJ053B | Find and rectify faults in appliance motors and associated controls |  |
|  | Removed | UEENEEJ067B | Solve problems in central plant air conditioning systems |  |
|  | Removed | UEENEEJ070B | Diagnose and rectify faults in refrigeration and air conditioning control systems |  |
|  | Removed | UEENEEJ072B | Recover, pressure and leak test, evacuate and charge refrigerants – split air conditioning systems |  |
| UEENEEJ120A | Resolve problems in industrial refrigeration systems |  | New Unit |  |
| K – Renewable/Sustainable Energy | | | | |
| UEENEEK101A | Maintain safety and tidiness of remote area power supply systems | UEENEEK001B | Maintain safety and tidiness of remote area power supply (RAPS) systems | E |
| UEENEEK102A | Work safely with remote area power supply systems | UEENEEK002B | Work safely with remote area power supply (RAPS) systems | E |
| UEENEEK103A | Conduct periodic maintenance of remote area power supply battery banks | UEENEEK003B | Conduct periodic maintenance of remote area power supply (RAPS) battery banks | E |
| UEENEEK104A | Conduct periodic maintenance of remote area power supply generator sets | UEENEEK004B | Conduct periodic maintenance of remote area power supply (RAPS) generator sets | E |
| UEENEEK105A | Conduct periodic maintenance of remote area power supply photo voltaic arrays | UEENEEK005B | Conduct periodic maintenance of remote area power supply (RAPS) photo voltaic arrays | E |
| UEENEEK106A | Conduct periodic maintenance of remote area power supply wind generators | UEENEEK006B | Conduct periodic maintenance of remote area power supply (RAPS) wind generators | E |
| UEENEEK107A | Conduct checks in the demand side use of remote area power supplies (RAPS) | UEENEEK007B | Conduct checks in the demand side use of remote area power supplies | E |
| UEENEEK108A | Plan periodic maintenance schedules of remote area power supplies (RAPS) | UEENEEK008B | Plan periodic maintenance schedules of remote area power supplies | E |
| UEENEEK109A | Attend to breakdowns in remote area power supplies (RAPS) | UEENEEK009B | Attend to breakdowns in remote area power supplies | E |
| UEENEEK110A | Co-ordinate maintenance of renewable energy (RE) apparatus and systems | UEENEEK010B | Coordinate maintenance of renewable energy apparatus and systems | E |
| UEENEEK111A | Assemble and connect remote area power supplies | UEENEEK011B | Assemble and connect remote area power supplies (RAPS) | E |
| UEENEEK112A | Provide basic sustainable energy solutions for energy reduction in residential premises | UEENEEK012B | Provide basic sustainable energy solutions for energy reduction in domestic premises | E |
|  | Removed | UEENEEK013B | Apply sustainable energy practice in daily activities |  |
| UEENEEK114A | Promote sustainable energy practices in the community | UEENEEK014B | Promote sustainable energy practice in the community | E |
| UEENEEK116A | Maintain and repair remote area power generation facilities | UEENEEK016A | Maintain and repair remote area power generation facilities | E |
| UEENEEK117A | Maintain and repair facilities associated with remote area essential service operations | UEENEEK017B | Maintain and repair facilities associated with remote area essential services operation | E |
| UEENEEK120A | Maintain operation of remote area power generation plant | UEENEEK020B | Maintain operation of remote area power plant | E |
| UEENEEK121A | Manage renewable energy (RE) projects | UEENEEK021B | Manage renewable energy projects | E |
| UEENEEK122A | Plan renewable energy (RE) projects | UEENEEK022B | Plan renewable energy projects | E |
| UEENEEK123A | Carry out basic repairs to renewable energy apparatus | UEENEEK023B | Carry out basic repairs to renewable energy apparatus by replacement of components | E |
| UEENEEK125A | Solve basic problems in photovoltaic energy apparatus and systems | UEENEEK025C | Solve basic problems in photovoltaic energy apparatus | E |
|  | Removed | UEENEEK026B | Install and set up grid connected photovoltaic power systems |  |
| UEENEEK127A | Diagnose and rectify faults in renewable energy control systems | UEENEEK027B | Diagnose faults in renewable energy control systems | E |
| UEENEEK128A | Solve problems in stand-alone renewable energy systems | UEENEEK028B | Solve problems in stand-alone renewable energy systems | E |
| UEENEEK129A | Design renewable energy (RE) heating systems | UEENEEK029B | Design renewable energy heating systems | E |
| UEENEEK130A | Solve problems in wind energy conversion systems rated up to 10 kW | UEENEEK030B | Solve problems in wind energy conversion systems | E |
| UEENEEK131A | Design wind energy conversion systems (WECS) rated to 10 kW | UEENEEK031B | Design wind energy conversion systems rated to 10 kW | E |
| UEENEEK132A | Develop strategies to address environmental and sustainability issues in the energy sector | UEENEEK032B | Develop strategies to address sustainability issues | E |
| UEENEEK133A | Design hybrid renewable power systems | UEENEEK033B | Design set up hybrid power systems | E |
| UEENEEK134A | Install ELV stand-alone photovoltaic power systems | UEENEEK034B | Install standalone photovoltaic power systems | E |
| UEENEEK135A | Design grid connected photovoltaic power supply systems | UEENEEK035C | Design grid connected power supply systems | E |
| UEENEEK136A | Install, configure and commission LV micro-hydro systems rated up to 6.4 kW | UEENEEK036B | Prepare grid connected photovoltaic power systems for LV connection | E |
| UEENEEK137A | Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW | UEENEEK037B | Install and set up micro-hydro systems | E |
| UEENEEK138A | Design micro-hydro systems rated to 6.4 kW | UEENEEK038B | Design micro-hydro systems | E |
| UEENEEK139A | Design stand-alone renewable energy (RE) systems | UEENEEK039B | Design stand-alone renewable energy systems | E |
| UEENEEK140A | Develop engineering solutions to renewable energy (RE) problems | UEENEEK040B | Develop engineering solution to renewable energy problems | E |
| UEENEEK142A | Apply environmentally and sustainable energy procedures in the energy sector | UEENEEK042A | Participate in environmentally sustainable work practices | E |
| UEENEEK143A | Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications | UEENEEK043A | Install small wind energy conversion systems for stand-alone applications | E |
| UEENEEK145A | Implement and monitor energy sector environmental and sustainable energy policies and procedures | UEENEEK045A | Implement & monitor, policies & procedures for environmentally sustainable electrotech work practice | E |
| UEENEEK146A | Design energy management controls for electrical installations in buildings | UEENEEK046A | Design energy management controls for electrical installations in buildings | E |
|  | Removed | UEENEEK047A | Maintain and monitor remote area essential service operations |  |
| UEENEEK148A | Install, configure and commission LV grid connected photovoltaic power systems | UEENEEK048A | Install, configure and commission grid connected photovoltaic power systems | E |
| UEENEEK149A | Verify compliance and functionality of a extra low voltage renewable energy installation | UEENEEK049A | Verify compliance and functionality of a renewable energy installation | E |
|  | Removed | UEENEEK050A | Assemble and set up photovoltaic apparatus in a domestic dwelling |  |
| UEENEEK151A | Develop effective engineering strategies for energy reduction in buildings | UEENEEK051A | Develop effective strategies for energy reduction in buildings | E |
| UEENEEK118A | Maintain and monitor remote area essential service (RAPS) operations |  | New Unit |  |
| UEENEEK124A | Solve basic problems in micro hydro systems |  | New Unit |  |
| UEENEEK144A | Install, configure and commission LV wind energy conversion systems rated up to 10 kW |  | New Unit |  |
| UEENEEK152A | Develop strategies to address sustainability issues for electrical installations |  | New Unit |  |
| UEENEEK153A | Assess energy loads and uses for energy efficiency in residential, office and retail premises |  | New Unit |  |
| UEENEEK154A | Assess energy loads and uses for energy efficiency in commercial facilities |  | New Unit |  |
| UEENEEK155A | Assess energy loads and uses for energy efficiency in industrial properties and enterprises |  | New Unit |  |
| N – Rail signalling units | | | | |
| UEENEEN101A | Maintain mechanical rail signalling equipment and infrastructure | UEENEEN001B | Service mechanical signalling equipment and infrastructure | E |
| UEENEEN102A | Assemble and wire internal electrical rail signalling equipment | UEENEEN002B | Assemble and wire internal electrical signalling equipment | E |
| UEENEEN103A | Install and maintain rail track circuit leads and bonds | UEENEEN003B | Install and maintain track circuit leads and bonds | E |
| UEENEEN104A | Test copper rail signalling cables | UEENEEN004B | Perform cable tests | E |
| UEENEEN105A | Install and maintain rail signalling power supplies | UEENEEN005B | Install and maintain signalling power supplies | E |
| UEENEEN106A | Install and maintain non-vital screen based control systems | UEENEEN006B | Maintain remote control and non-vital interlocking control systems | E |
| UEENEEN107A | Install and maintain active level crossing equipment | UEENEEN007B | Maintain power signalling and protected level crossing equipment | E |
| UEENEEN108A | Install and maintain power operated point actuating devices | UEENEEN008B | Maintain on-site power operated point-activating devices | E |
| UEENEEN109A | Install and maintain train detection equipment | UEENEEN009B | Maintain track circuit equipment | E |
| UEENEEN110A | Install and maintain non-vital telemetry systems | UEENEEN010B | Maintain electronic signalling and communication equipment | E |
| UEENEEN111A | Install and maintain trackside signal and train protection equipment | UEENEEN011B | Install and maintain power operated signalling equipment | E |
| UEENEEN112A | Install and maintain vital relay interlocking systems | UEENEEN012B | Maintain power signalling and protective relay interlocking systems | E |
|  | Removed | UEENEEN013B | Install and test computer based interlocking equipment |  |
| UEENEEN114A | Install and maintain computer based interlocking rail systems | UEENEEN014B | Maintain computer based and solid state interlocking systems | E |
|  | Removed | UEENEEN015B | Conduct routine inspecting and testing of new signal cables and lines |  |
| UEENEEN116A | Maintain electronic and microprocessor-based remote control systems | UEENEEN016B | Maintain electronic switched and microprocessor-based remote control systems | E |
|  | Removed | UEENEEN017B | Install and maintain transmission interface equipment |  |
| UEENEEN118A | Find and repair rail signalling system faults | UEENEEN018B | Find and repair wiring system faults | E |
|  | Removed | UEENEEN019B | Test equipment and isolate faults |  |
|  | Removed | UEENEEN020B | Install electrical power and control equipment for rail networks |  |
| UEENEEN121A | Repair rail signalling power and control cables | UEENEEN021A | Repair rail signalling cables | E |
|  | Removed | UEENEEN025B | Coordinate and manage track protection |  |
| UEENEEN126A | Develop rail signalling system maintenance programs | UEENEEN026B | Develop rail signalling maintenance programs | E |
| UEENEEN127A | Decommission electrical and electro-mechanical rail signalling from service | UEENEEN027B | Decommission electrical and electro-mechanical signalling from service | E |
| UEENEEN128A | Test and commission rail power equipment | UEENEEN028B | Test and commission power signalling equipment | E |
| P – Restricted and specialist electrical work units | | | | |
| UEENEEP010A | Disconnect / reconnect appliances connected to low voltage installation wiring | UEENEEP001B | Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply (Endorsement for Appliances) | E |
| UEENEEP011A | Disconnect / reconnect neon signs connected to low voltage installation wiring | UEENEEP001B | Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply (Endorsement for Neon Signs) | E |
| UEENEEP013A | Disconnect / reconnect control devices connected to low voltage installation wiring | UEENEEP001B | Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply (Endorsement for Control Devices) | E |
| UEENEEP014A | Disconnect / reconnect water heaters connected to low voltage installation wiring | UEENEEP001B | Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply (Endorsement for Water Heaters) | E |
| UEENEEP015A | Disconnect / reconnect motors connected to low voltage installation wiring | UEENEEP001B | Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply (Endorsement for Motors) | E |
| UEENEEP024A | Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply | UEENEEP002B | Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply | E |
| UEENEEP025A | Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. supply | UEENEEP003B | Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply | E |
| UEENEEP021A | Disconnect / reconnect explosion-protected appliances and control devices connected to low voltage installation wiring | UEENEEP004B | Disconnect and reconnect explosion-protected electrical equipment connected to Low Voltage supply | E |
| UEENEEP022A | Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles | UEENEEP005B | Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles | E |
| UEENEEP023A | Attach flexible cables and plugs to electrical equipment connected to a HV supply | UEENEEP006B | Attach flexible cables and plugs to electrical equipment connected to a high voltage supply | E |
| UEENEEP016A | Locate and rectify faults in low voltage appliances using set procedures | UEENEEP007B | Locate and rectify faults in electrical low voltage equipment following prescribed procedures (Endorsement for Appliances) | E |
| UEENEEP018A | Locate and rectify faults in low voltage control devices using set procedures | UEENEEP007B | Locate and rectify faults in electrical low voltage equipment following prescribed procedures (Endorsement for Control Devices) | E |
| UEENEEP019A | Locate and rectify faults in low voltage water heaters using set procedures | UEENEEP007B | Locate and rectify faults in electrical low voltage equipment following prescribed procedures (Endorsement for Water Heaters) | E |
| UEENEEP020A | Locate and rectify faults in low voltage motors using set procedures | UEENEEP007B | Locate and rectify faults in electrical low voltage equipment following prescribed procedures (Endorsement for Motors) | E |
| UEENEEP026A | Conduct in-service safety testing of electrical cord connected equipment and cord assemblies | UEENEEP008B | 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 |
| UETTDRIS74A | Develop engineering solutions for energy supply system protection problems | UEENEEG046B | Develop engineering solutions for energy supply system protection problems | E |
| UETTDRIS73A | Develop engineering solutions for energy supply power transformer problems | UEENEEG040B | Develop engineering solutions for energy supply power transformer problems | E |
| UETTDRIS72A | Diagnose and rectify faults in distributed Generation systems | UEENEEG039B | Diagnose and rectify faults in distributed generation systems | E |
| UETTDRIS71A | Diagnose and rectify faults in electrical energy supply transmission systems | UEENEEG042B | Diagnose and rectify faults in electrical energy supply transmission systems | E |
| UETTDRIS70A | Diagnose and rectify faults in electrical energy distribution systems | UEENEEG038B | Diagnose and rectify faults in electrical energy distribution systems | E |
| UETTDRIS69A | Diagnose and rectify faults in energy supply apparatus | UEENEEG037B | Diagnose and rectify faults in energy supply apparatus | E |
| UETTDRIS68A | Solve problems in energy supply network protection equipment and systems | UEENEEG015B | Find and rectify faults in energy supply network equipment | E |
| UETTDRIS67A | Solve problems in energy supply network equipment | UEENEEG015B | Find and rectify faults in energy supply network equipment | E |
| UETTDRIS44A | Perform HV field switching operation to a given schedule | UEENEEG034B | 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

NOTE: This table has been updated in UEE11 V1.3 to amend errors in the mapping table below.

| UEE07 Unit Code – V4 | UEE07 Unit Title – V4 | | UEE07 Unit Code – V3.1 | UEE07 Unit Title – V3.1 | E = Equivalent  N = Not Equivalent - |
| --- | --- | --- | --- | --- | --- |
| UEENEEE011C | Manage risk in electrotechnology activities | | UEENEE011B | Manage risk in electrotechnology activities | E |
| 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 | | UEENEEE001B | Apply OHS practices in the workplace | E |
| UEENEEE102A | Fabricate, assemble and dismantle utilities industry components | | UEENEEE002B | Dismantle, assemble and fabricate electrotechnology components | E |
| 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 |
| UEENEEE125A | Provide engineering solutions for problems in complex multiple path circuits | | UEENEEE025B | Solve problems in complex multiple path circuits | E |
| UEENEEE126A | Provide solutions to basic engineering computational problems | | UEENEEE026B | Provide computational solutions to basic engineering problems | E |
| UEENEEE137A | Document and apply measures to control OHS risks associated with electrotechnology work | | UEENEEE037B | Document occupational hazards and risks in electrotechnology | E |
| UEENEEG006A | Solve problems in single and three phase low voltage machines | |  | New Unit |  |
| UEENEEG033A | Solve problems in single and three phase low voltage electrical apparatus and circuits | |  | New Unit |  |
| UEENEEG063A | Arrange circuits, control and protection for general electrical installations | |  | New Unit |  |
| UEENEEG076A | Install and replace low voltage current transformer metering | |  | New Unit |  |
| UEENEEG101A | Solve problems in electromagnetic devices and related circuits | | UEENEEG001B | Solve problems in electromagnetic circuits | E |
| UEENEEG102A | Solve problems in low voltage a.c. circuits | | UEENEEG002B | Solve problems in single and three phase low voltage circuits | E |
| UEENEEG103A | Install low voltage wiring and accessories | | UEENEEG003B | Install wiring and accessories for low voltage circuits | E |
| UEENEEG104A | Install appliances, switchgear and associated accessories for low voltage electrical installations | | UEENEEG004B | Install low voltage electrical apparatus and associated equipment | E |
| UEENEEG105A | Verify compliance and functionality of low voltage general electrical installations | | UEENEEG005B | Verify compliance and functionality of general electrical installations | E |
| UEENEEG106A | Terminate cables, cords and accessories for low voltage circuits | |  | New Unit |  |
| UEENEEG107A | Select wiring systems and cables for low voltage general electrical installations | | UEENEEG007B | Select and arrange equipment for general electrical installations | E |
| UEENEEG108A | Trouble-shoot and repair faults in low voltage electrical apparatus and circuits | | UEENEEG008B | Find and repair faults in electrical apparatus and circuits | E |
| UEENEEG109A | Develop and connect electrical control circuits | | UEENEEG009B | Develop and connect control circuits | E |
| UEENEEG149A | Provide engineering solutions to problems in complex polyphase power circuits | | UEENEEG049B | Solve problems in complex polyphase power circuits | E |
| UEENEEG171A | Install, set up and commission interval metering | | UEENEEG071C | Install and set up interval metering | E |
| 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 |  |
| UEENEEJ102A | Prepare and connect refrigerant tubing and fittings | | UEENEEJ002B | Prepare refrigerant tubing and fittings | E |
| UEENEEJ103A | Establish the basic operating conditions of vapour compression systems | | UEENEEJ003B | Determine the basic operating conditions of vapour compression systems | E |
| UEENEEJ104A | Establish the basic operating conditions of air conditioning systems | | UEENEEJ004B | Determine the basic operating conditions of air conditioning systems | E |
| UEENEEJ105A | Position, assemble and start up single head split air conditioning and water heating heat pump systems | | UEENEEJ005B | Position, assemble and start up split air conditioning systems | E |
| UEENEEJ106A | Install refrigerant pipe work, flow controls and accessories | | UEENEEJ006B | Install pipework for refrigeration and air conditioning systems | E |
| UEENEEJ107A | Install air conditioning and refrigeration systems, major components and associated equipment | | UEENEEJ007B | Install refrigeration and air conditioning systems, major components and associated equipment | E |
| UEENEEJ108A | Recover, pressure test, evacuate, charge and leak test refrigerants | | UEENEEJ008B | Recover, pressure and leak test, evacuate and charge refrigerants | E |
| UEENEEJ109A | Verify functionality and compliance of refrigeration and air conditioning installations | | UEENEEJ009B | Verify compliance and functionality of refrigeration and air conditioning installations | E |
| UEENEEJ110A | Select refrigerant piping, accessories and associated controls | | UEENEEJ010B | Select refrigerant pipe/tube, accessories and associated controls | E |
| UEENEEJ111A | Diagnose and rectify faults in air conditioning and refrigeration systems and components | | UEENEEJ011B | Diagnose and rectify faults in refrigeration and air conditioning systems and components | E |
| UEENEEJ112A | Diagnose and rectify faults in complex air conditioning/refrigeration systems | | UEENEEJ012B | Diagnose and rectify faults in complex refrigeration/air conditioning systems | E |
| UEENEEJ113A | Commission air conditioning and refrigeration systems | | UEENEEJ013B | Commission refrigeration and air conditioning systems | E |
| UEENEEJ114A | Resolve problems in hydronic systems | | UEENEEJ014B | Solve problems in hydronic systems | E |
| UEENEEJ115A | Resolve problems in beverage dispensers | | UEENEEJ015B | New Unit |  |
| UEENEEJ116A | Resolve problems in transport refrigeration systems | | UEENEEJ016B | Solve problems in transport refrigeration systems | E |
| UEENEEJ117A | Resolve problems in ultra-low temperature refrigeration systems | | UEENEEJ017B | Solve problems in ultra-low temperature refrigeration systems | E |
| UEENEEJ118A | Resolve problems in post mix refrigeration systems | | UEENEEJ018B | Solve problems in post mix refrigeration systems | E |
| UEENEEJ119A | Resolve problems in ice making systems | | UEENEEJ019B | Solve problems in ice making systems | E |
| UEENEEJ121A | Monitor and adjust refrigeration energy management systems | | UEENEEJ021B | Monitor and adjust energy management systems on refrigeration systems | E |
| UEENEEJ122A | Diagnose faults in complex HVAC /refrigeration control systems | | UEENEEJ022B | Diagnose faults in complex refrigeration or HVAC control systems | E |
| UEENEEJ123A | Commission complex (HVAC) heating, ventilation and air conditioning systems | | UEENEEJ023B | Commission complex heating, ventilation and air conditioning (HVAC) systems | E |
| UEENEEJ124A | Commission refrigeration/air conditioning hydronic systems | | UEENEEJ024B | Commission hydronic systems for refrigeration and/or air conditioning | E |
| UEENEEJ125A | Commission complex refrigeration systems and equipment | | UEENEEJ025B | Commission complex refrigeration systems | E |
| UEENEEJ126A | Commission complex refrigeration/air conditioning control systems | | UEENEEJ026B | Commission complex control systems for refrigeration/air conditioning | E |
| UEENEEJ127A | Establish the thermodynamic parameters of refrigeration and air conditioning systems | | UEENEEJ027B | Determine thermodynamic parameters of refrigeration and air conditioning systems | E |
| UEENEEJ128A | Produce HVAC/R system design drawings | | UEENEEJ028B | Produce HVAC/R design drawings | E |
| UEENEEJ129A | Establish heat loads for commercial refrigeration and air conditioning applications | | UEENEEJ029B | Determine the heat loads for commercial refrigeration and air conditioning applications | E |
| UEENEEJ130A | Produce HVAC/R control system diagrams | | UEENEEJ030B | Produce HVAC/R control system design diagrams | E |
| UEENEEJ131A | Determine noise and vibration encountered in HVAC/R applications | | UEENEEJ031B | Provide solutions to vibration problems in HVAC/R system design | E |
| UEENEEJ132A | Design commercial refrigeration systems and select components | | UEENEEJ032B | Design commercial refrigeration systems | E |
| UEENEEJ133A | Design industrial refrigeration systems and select components | | UEENEEJ033B | Design industrial refrigeration systems | E |
| UEENEEJ134A | Design heating, ventilation and air conditioning (HVAC) systems and select components | | UEENEEJ034B | Design heating, ventilation and air conditioning (HVAC) systems | E |
| UEENEEJ135A | Design control systems for refrigeration or heating, ventilation and air conditioning systems | | UEENEEJ035B | Design control systems for a heating, ventilation, air conditioning or refrigeration system | E |
| UEENEEJ136A | Evaluate and report on building services energy management systems | | UEENEEJ036B | Evaluate and report on energy management | E |
| UEENEEJ137A | Evaluate and report on the indoor air quality of buildings | | UEENEEJ037B | Evaluate and report on air quality in buildings | E |
| UEENEEJ138A | Analyse vibration and noise in refrigeration and air conditioning systems | | UEENEEJ038B | Analyse noise and vibration in refrigeration and air conditioning systems | E |
| UEENEEJ139A | Develop specifications and prepare drawings for HVAC/Refrigeration projects | | UEENEEJ039B | Develop specifications and prepare drawings for HVAC/R projects | E |
| UEENEEJ141A | Design complex commercial refrigeration systems and select equipment | | UEENEEJ041B | Design complex commercial refrigeration systems | E |
| UEENEEJ142A | Design complex industrial refrigeration systems and select equipment | | UEENEEJ042B | Design complex industrial refrigeration systems | E |
| UEENEEJ143A | Design complex air conditioning systems and select equipment | | UEENEEJ043B | Design complex air conditioning systems | E |
| UEENEEJ144A | Design mechanical ventilation/exhaust systems and select equipment | | UEENEEJ044B | Design mechanical ventilation/exhaust systems | E |
| UEENEEJ145A | Design hydronic systems and select equipment | | UEENEEJ045B | Design hydronic systems | E |
| UEENEEJ146A | Design complex control systems for refrigeration, heating ventilation or air conditioning systems | | UEENEEJ046B | Design complex control systems for heating, ventilation, air conditioning or refrigeration systems | E |
| UEENEEJ147A | Audit energy use for commercial HVAC/Refrigeration systems | | UEENEEJ047B | Audit energy use for commercial HVAC/R systems | E |
| UEENEEJ148A | Audit HVAC/R control systems for compliance with regulations and standards | | UEENEEJ048B | Audit HVAC/R control systems for compliance with standards and regulations | E |
| UEENEEJ149A | Develop heat exchanger design specifications | | UEENEEJ049B | Develop specifications for heat exchanger designs | E |
| UEENEEJ150A | Evaluate new and alternative technologies applicable to electrotechnology applications | | UEENEEJ050B | Evaluate alternative and new technologies applicable to electrotechnology applications | E |
| UEENEEJ151A | Service small electrical appliances and power tools | | UEENEEJ051B | Service small appliances and power tools | E |
|  | Deleted | | UEENEEJ052B | Carry out repairs to appliance refrigeration systems |  |
| UEENEEJ153A | Find and rectify faults in motors and associated controls in refrigeration and air conditioning systems | | UEENEEJ053B | Find and rectify faults in appliance motors and associated controls | N |
| UEENEEJ154A | Find and rectify faults in appliance control systems and devices | | UEENEEJ054B | Find and rectify faults in appliance control devices and systems | E |
| UEENEEJ155A | Service refrigeration appliances | | UEENEEJ055B | Service refrigerated appliances | E |
| UEENEEJ156A | Service clothes washing machines and dryers | | UEENEEJ056B | Service clothes washers and dryers | E |
| UEENEEJ157A | Service electrical heating appliances | | UEENEEJ057B | Service electric heating appliances | E |
| UEENEEJ158A | Service dishwasher machines | | UEENEEJ058B | Service dish washing machines | E |
| UEENEEJ159A | Service gas heating appliances | | UEENEEJ059B | Service gas appliances | E |
| UEENEEJ161A | Verify functionality and compliance of appliances | | UEENEEJ061B | Verify compliance and functionality of appliances | E |
| UEENEEJ162A | Recover, pressure test, evacuate, charge and leak test refrigerants — appliances | | UEENEEJ062B | Recover, pressure and leak test, evacuate and charge refrigerants – appliances | E |
|  | 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/R systems | E |
| UEENEEJ165A | Evaluate thermodynamic and fluid parameters of refrigeration systems | | UEENEEJ065B | Evaluate fluid and thermodynamic parameters of refrigeration systems | E |
| UEENEEJ166A | Resolve problems in dairy refrigeration systems | | UEENEEJ066B | Solve problems in dairy refrigeration systems | E |
| UEENEEJ167A | Resolve problems in central plant air conditioning systems | UEENEEJ067B | | Solve problems in central plant air conditioning systems | E |
| UEENEEJ168A | Maintain microbial control of refrigeration and air conditioning systems | | UEENEEJ068B | Maintain microbial control of air and water systems | E |
| UEENEEJ170A | Diagnose and rectify faults in air conditioning and refrigeration control systems | | UEENEEJ070B | Diagnose and rectify faults in refrigeration and air conditioning control systems | E |
| UEENEEJ171A | Resolve problems in refrigerated beverage vending cabinets | | UEENEEJ071B | Solve problems in refrigerated beverage vending cabinets | E |
| UEENEEJ172A | Recover, pressure test, evacuate, charge and leak test refrigerants — split systems | | UEENEEJ072B | Recover, pressure and leak test, evacuate and charge refrigerants – split air conditioning systems | E |
| UEENEEJ173A | Service and repair microwave ovens | | UEENEEJ073B | Service microwave ovens | E |
| UEENEEJ174A | Apply safety awareness and legal requirements for hydrocarbon refrigerants | | UEENEEJ074A | Safety awareness and legal requirements for hydrocarbon refrigerants | E |
| UEENEEJ175A | Service and repair self contained hydrocarbon air conditioning and refrigeration systems | | UEENEEJ075A | Service and repair self contained hydrocarbon refrigeration and air conditioning systems | E |
| UEENEEJ176A | Install and commission hydrocarbon refrigeration systems, components and associated equipment | | UEENEEJ076B | Install and commission hydrocarbon refrigeration systems, major components and associated equipment | E |
| UEENEEJ177A | Design hydrocarbon refrigerated systems | | UEENEEJ077A | Design hydrocarbon refrigeration systems | E |
| UEENEEJ178A | Apply safety awareness and legal requirements for ammonia refrigerant | | UEENEEJ078A | Safety awareness in using ammonia as a refrigerant | E |
| UEENEEJ179A | Repair and service ammonia refrigeration systems | | UEENEEJ079A | Service and repair ammonia refrigeration systems | E |
| UEENEEJ180A | Install and commission ammonia refrigeration systems, components and associated equipment | | UEENEEJ080A | Install and commission ammonia refrigeration systems | E |
| UEENEEJ181A | Design ammonia refrigerated systems | | UEENEEJ081A | Design ammonia refrigeration systems | E |
| UEENEEJ182A | Repair and service secondary refrigeration systems | | UEENEEJ082A | Service and repair secondary refrigeration systems | E |
| UEENEEJ183A | Design secondary refrigerant systems | | UEENEEJ083A | Design secondary refrigeration systems | E |
| UEENEEJ184A | Apply safety awareness and legal requirements for carbon dioxide refrigerant | | UEENEEJ084A | Safety awareness in using carbon dioxide as a refrigerant | E |
| UEENEEJ185A | Repair and service carbon dioxide refrigeration systems | | UEENEEJ085A | Service and repair carbon dioxide refrigeration systems | E |
| UEENEEJ186A | Install and commission carbon dioxide refrigeration systems, components and associated equipment | | UEENEEJ086A | Install and commission carbon dioxide refrigeration systems | E |
| UEENEEJ187A | Design carbon dioxide refrigerated systems | | UEENEEJ087A | Design carbon dioxide refrigeration systems | E |
| 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 | E |
| UEENEEJ189A | Service room air conditioners | | UEENEEJ089A | Room air conditioners servicing | E |
| UEENEEJ190A | Select basic commercial refrigeration system equipment, components and accessories | | UEENEEJ090A | Select basic commercial refrigeration system equipment and components | E |
| UEENEEJ191A | Select residential air conditioning system equipment, components and accessories | | UEENEEJ091A | Select residential air conditioning system equipment and components | E |
| UEENEEJ192A | Analyse the psychrometric performance of HVAC/R systems | | UEENEEJ063B | Analyse the psychrometric and thermodynamic performance of HVAC/R systems | E |
| UEENEEJ193A | Analyse the thermodynamic performance of HVAC/R systems | |
| UEENEEJ194A | Solve problems in low voltage refrigeration circuits | | UEENEEJ053B | Find and rectify faults in appliance motors and associated controls | N |
| 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 | | UEENEEP009B | Locate and rectify faults in electrical low voltage appliances up to 250V following prescribed procedures |  |
| UEENEEP012A | Disconnect / reconnect composite appliances connected to low voltage installation wiring | | UEENEEP001B | Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply | E |
| UEENEEP017A | Locate and rectify faults in low voltage composite appliances using set procedures | | UEENEEP007B | Locate and rectify faults in electrical low voltage equipment following prescribed procedures | E |
| UEENEEP024A | Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply | | UEENEEP002B | Attach cords and plugs to electrical equipment for connection to a single phase 250 Volt supply | E |
| UEENEEP025A | Attach cords, cables and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply | | UEENEEP003B | Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply | E |

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

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

By agreement between the two industry sectors selected Rail Signalling units were deleted from TLI07 and transferred to E-Oz through importation into UEE07 Electrotechnology Training Package. Under this agreement E-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 Logistics Training Package | | E = Equivalent N = Not Equivalent |
| Code | Title | Code | Title |  |
| UEENEEN002B | Assemble and wire internal electrical signalling equipment | TLIB5907B | Assemble and wire internal electrical signalling equipment | E |
| UEENEEN003B | Install and maintain track circuit leads and bonds | TLIB6207B | Install and maintain track circuit leads and bonds | E |
| UEENEEN004B | Perform cable tests | TLIB5707B | Perform cable system test | E |
| UEENEEN005B | Install and maintain signalling power supplies | TLIB6607B | Install and maintain signalling power supplies | E |
| UEENEEN006B | Maintain remote control and non-vital interlocking control systems | TLIB5007B | Maintain remote control and non-vital interlocking control systems | E |
| UEENEEN007B | Maintain power signalling and protected level crossing equipment | TLIB5107B | Maintain power signalling and protected level crossing equipment | E |
| UEENEEN008B | Maintain on site power operated point-activating devices | TLIB5207B | Maintain on-site power operated point activating devices | E |
| UEENEEN009B | Maintain track circuit equipment | TLIB5407B | Install and maintain track circuit equipment | E |
| UEENEEN010B | Maintain electronic signalling and communication equipment | TLIB6307B | Maintain electronic signalling and communications systems | E |
| UEENEEN011B | Install and maintain power operated signalling equipment | TLIB6707B | Install and maintain power operated signalling equipment | E |
| UEENEEN012B | Maintain power signalling and protective relay interlocking systems | TLIB6907B | Maintain power signalling and protective relay interlocking systems | E |
| UEENEEN013B | Install and test computer based interlocking equipment | TLIS1107B | Install and test computer based and solid state interlocking equipment | E |
| UEENEEN014B | Maintain computer based and solid state interlocking systems | TLIB5507B | Maintain computer based and solid state interlocking equipment | E |
| UEENEEN015B | Conduct routine inspecting and testing of new signal cables and lines | TLIB5607B | Conduct route testing of new signal cables/line route | E |
| UEENEEN016B | Maintain electronic switched and microprocessor-based remote control systems | TLIB6407B | Maintain electronic switched and micro processor-based remote control systems | E |
| UEENEEN017B | Install and maintain transmission interface equipment | TLIB6507B | Install and maintain transmission interface equipment | E |
| UEENEEN028B | Test and commission power signalling equipment | TLIS1007B | Test and commission power signalling and protected level crossing equipment | E |

## 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 | E = Equivalent  N = Not Equivalent - |
| --- | --- | --- | --- | --- |
| UEENEEE019C | Solve problems in multiple path a.c. circuits | UEENEEE019B | Solve problems in multiple path a.c. circuits | E |
| UEENEEE024C | Compile and produce an electrotechnology report | UEENEEE024B | Compile and produce an electrotechnology report | E |
| UEENEEE048C | Carry out routine work activities in an electrotechnology environment | UEENEEE048B | Carry out routine work activities in an electrotechnology environment | E |
| UEENEEE079A | Identify and select components, accessories and materials for electrotechnology work activities | UEENEEE040B | Identify and select components/accessories/materials for electrotechnology work activities | E |
| UEENEEE084A | Write specifications for electrotechnology engineering projects |  | New Unit, Not previously covered |  |
| UEENEEF016A | Lay and connect cabling for direct access to telecommunications services | UEENEEF001B | Lay and connect cabling for direct access to telecommunication services | E |
| UEENEEG072C | Investigate and report on electrical incidents | UEENEEG072B | Investigate and report on electrical incidents | E |
| UEENEEG075A | Develop compliance policies and plans to conduct a contracting business | UEENEEG014B | Develop plans and compliance policies to conduct a contracting business | E |
| UEENEEH072C | Find and repair faults in communication systems | UEENEEH072B | Find and repair faults in communication systems | E |
| UEENEEH090A | Provide solutions to air traffic control system problems |  | New Unit, Not previously covered |  |
| UEENEEI007C | Install process instrumentation and control cabling and tubing | UEENEEI007B | Install process instrumentation and control cabling and tubing | E |
| UEENEEI008C | Install process control apparatus and associated equipment | UEENEEI008B | Install process control apparatus and associated equipment | E |
| UEENEEJ074A | Apply safety awareness and legal requirements for hydrocarbon refrigerants |  | New Unit, Not previously covered |  |
| UEENEEJ075A | Service and repair self contained hydrocarbon refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ076A | Install and commission hydrocarbon refrigeration systems, major components and associated equipment |  | New Unit, Not previously covered |  |
| UEENEEJ077A | Design hydrocarbon refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ078A | Apply safety awareness in using ammonia as a refrigerant |  | New Unit, Not previously covered |  |
| UEENEEJ079A | Service and repair ammonia refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ080A | Install and commission ammonia refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ081A | Design ammonia refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ082A | Service and repair secondary refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ083A | Design secondary refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ084A | Apply safety awareness for in using carbon dioxide as a refrigerant |  | New Unit, Not previously covered |  |
| UEENEEJ085A | Service and repair carbon dioxide refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ086A | Install and commission carbon dioxide refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ087A | Design complex carbon dioxide refrigeration systems |  | New Unit, Not previously covered |  |
| UEENEEJ088A | Service and repair self contained carbon dioxide refrigeration and heat pump systems |  | New Unit, Not previously covered |  |
| UEENEEJ089A | Service room air conditioners servicing | UEENEEJ060B | Service room air conditioners | E |
| UEENEEJ089A | Service room air conditioners | UEENEEJ060B | Service room air conditioners | E |
| UEENEEJ090A | Select basic commercial refrigeration system equipment and components |  | New Unit, Not previously covered |  |
| UEENEEJ091A | Select residential air conditioning system equipment and components |  | New Unit, Not previously covered |  |
| UEENEEK016A | Maintain and monitor remote area generation facilities |  | New Unit, Not previously covered |  |
| UEENEEK047A | Maintain and monitor remote area essential service operations |  | New Unit, Not previously covered |  |
| UEENEEK049A | Verify compliance and functionality of a renewable energy installation | UEENEEK015B | Verify compliance and functionality of renewable energy installations | E |
| UEENEEK050A | Assemble and set up photovoltaic apparatus in a domestic dwelling | UEENEEK024B | Assemble and set up photovoltaic apparatus in domestic dwellings | E |
| UEENEEK051A | Develop effective strategies for energy reduction in buildings | UEENEEK041B | Develop strategies for effective energy reduction in buildings | E |
| UEENEEM019A | Attend to breakdowns in hazardous areas — coal mining | UEENEEM002B | Attend to breakdowns in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM002B (Ex’d’. Ex ‘e’, Ex ‘i’, Ex ‘p’, Ex ‘t’) |
| UEENEEM020A | Attend to breakdowns in hazardous areas — gas atmospheres | UEENEEM002B | Attend to breakdowns in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM002B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM021A | Attend to breakdowns in hazardous areas — dust atmospheres | UEENEEM002B | Attend to breakdowns in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM002B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM022A | Attend to breakdowns in hazardous areas — pressurisation | UEENEEM002B | Attend to breakdowns in hazardous areas | E, provided endorsement Ex ‘p’ is met in UEENEEM002B |
| UEENEEM023A | Install explosion-protected equipment and wiring systems — coal mining | UEENEEM004B | Install explosion-protected equipment and wiring systems | E, provided the following endorsements specified in the range statement are met in UEENEEM004B (Ex’d’. Ex ‘e’, Ex ‘i’, Ex ‘p’, Ex ‘t’) |
| UEENEEM024A | Install explosion-protected equipment and wiring systems — gas atmospheres | UEENEEM004B | Install explosion-protected equipment and wiring systems | E, provided the following endorsements specified in the range statement are met in UEENEEM004B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM025A | Install explosion-protected equipment and wiring systems — dust atmospheres | UEENEEM004B | Install explosion-protected equipment and wiring systems | E, provided the following endorsements specified in the range statement are met in UEENEEM004B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM026A | Install explosion-protected equipment and wiring systems — pressurisation | UEENEEM004B | Install explosion-protected equipment and wiring systems | E, provided endorsement Ex ‘p’ is met in UEENEEM004B |
| UEENEEM027A | Maintain equipment in hazardous areas — coal mining | UEENEEM006B | Maintain equipment in hazardous areas | E, provided all endorsements specified in the range statement are met in UEENEEM006B |
| UEENEEM028A | Maintain equipment in hazardous areas — gas atmospheres | UEENEEM006B | Maintain equipment in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM004B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM029A | Maintain equipment in hazardous areas — dust atmospheres | UEENEEM006B | Maintain equipment in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM006B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM030A | Maintain equipment in hazardous areas — pressurisation | UEENEEM006B | Maintain equipment in hazardous areas | E, provided endorsement Ex ‘p’ is met in UEENEEM006B |
| UEENEEM031A | Overhaul and repair of explosion-protected equipment — coal mining | UEENEEM007B | Overhaul and repair explosion-protected equipment | E, provided the following endorsements specified in the range statement are met in UEENEEM007B (Ex’d’. Ex ‘e’, Ex ‘i’, Ex ‘p’, Ex ‘t’) |
| UEENEEM032A | Overhaul and repair of explosion-protected equipment — flameproof enclosures | UEENEEM007B | Overhaul and repair explosion-protected equipment | E, provided all endorsements specified in the range statement are met in UEENEEM007B |
| UEENEEM033A | Overhaul and repair of explosion-protected equipment — gas atmospheres | UEENEEM007B | Overhaul and repair explosion-protected equipment | E, provided the following endorsements specified in the range statement are met in UEENEEM007B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM034A | Overhaul and repair of explosion-protected equipment — dust atmospheres | UEENEEM007B | Overhaul and repair explosion-protected equipment | E, provided the following endorsements specified in the range statement are met in UEENEEM007B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM035A | Conduct a conformity assessment of explosion-protected equipment — coal mining | UEENEEM008B | Assess explosion-protected equipment for compliance with standards | No |
| UEENEEM036A | Conduct a conformity assessment of explosion-protected equipment — gas atmospheres | UEENEEM008B | Assess explosion-protected equipment for compliance with standards | No |
| UEENEEM037A | Conduct a conformity assessment of explosion-protected equipment — dust atmospheres | UEENEEM008B | Assess explosion-protected equipment for compliance with standards | No |
| UEENEEM038A | Conduct testing of hazardous areas installations — coal mining | UEENEEM009B | Test installations in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM009B (Ex’d’. Ex ‘e’, Ex ‘i’, Ex ‘p’, Ex ‘t’) |
| UEENEEM039A | Conduct testing of hazardous areas installations — gas atmospheres | UEENEEM009B | Test installations in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM009B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM040A | Conduct testing of hazardous areas installations — dust atmospheres | UEENEEM009B | Test installations in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM009B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM041A | Conduct testing of hazardous areas installations — pressurisation | UEENEEM009B | Test installations in hazardous areas | E, provided endorsement Ex ‘p’ is met in UEENEEM009B |
| UEENEEM042A | Conduct visual inspection of hazardous areas installations | UEENEEM010B | Conduct close inspection of existing hazardous areas installations | E |
| UEENEEM043A | Conduct detailed inspection of hazardous areas installations — coal mining | UEENEEM011B | Conduct detailed inspection of hazardous areas installations | E, provided the following endorsements specified in the range statement are met in UEENEEM011B (Ex’d’. Ex ‘e’, Ex ‘i’, Ex ‘p’, Ex ‘t’) |
| UEENEEM044A | Conduct detailed inspection of hazardous areas installations — gas atmospheres | UEENEEM011B | Conduct detailed inspection of hazardous areas installations | E, provided the following endorsements specified in the range statement are met in UEENEEM011B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM045A | Conduct detailed inspection of hazardous areas installations — dust atmospheres | UEENEEM011B | Conduct detailed inspection of hazardous areas installations | E, provided the following endorsements specified in the range statement are met in UEENEEM011B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM046A | Conduct detailed inspection of hazardous areas installations — pressurisation | UEENEEM011B | Conduct detailed inspection of hazardous areas installations | E, provided endorsement Ex ‘p’ is met in UEENEEM011B |
| UEENEEM047A | Develop and manage maintenance programs for hazardous areas electrical equipment — coal mining | UEENEEM012B | Develop and manage maintenance programs for hazardous areas electrical equipment | E, provided the following endorsements specified in the range statement are met in UEENEEM012B (Ex’d’. Ex ‘e’, Ex ‘i’, Ex ‘p’, Ex ‘t’) |
| UEENEEM048A | Develop and manage maintenance programs for hazardous areas electrical equipment — gas atmospheres | UEENEEM012B | Develop and manage maintenance programs for hazardous areas electrical equipment | E, provided the following endorsements specified in the range statement are met in UEENEEM012B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM049A | Develop and manage maintenance programs for hazardous areas electrical equipment — dust atmospheres | UEENEEM012B | Develop and manage maintenance programs for hazardous areas electrical equipment | E, provided the following endorsements specified in the range statement are met in UEENEEM012B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM050A | Develop and manage maintenance programs for hazardous areas electrical equipment — pressurisation | UEENEEM012B | Develop and manage maintenance programs for hazardous areas electrical equipment | E, provided endorsement Ex ‘p’ is met in UEENEEM012B |
| UEENEEM051A | No unit available as modifications are regarded as manufacturing. | UEENEEM014B | Design and develop modifications to explosion-protected equipment |  |
| UEENEEM052A | Classify hazardous areas — gas atmospheres | UEENEEM015B | Classify hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM015B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM053A | Classify hazardous areas — dust atmospheres | UEENEEM015B | Classify hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM015B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM054A | Plan electrical installations for hazardous areas — gas atmospheres | UEENEEM016B | Design electrical installations in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM016B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM055A | Plan electrical installations for hazardous areas — dust atmospheres | UEENEEM016B | Design electrical installations in hazardous areas | E, provided the following endorsements specified in the range statement are met in UEENEEM016B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM056A | Plan electrical installations for hazardous areas — pressurisation | UEENEEM016B | Design electrical installations in hazardous areas | E, provided endorsement Ex ‘p’ is met in UEENEEM016B |
| UEENEEM057A | Design explosion-protected electrical systems and installations — gas atmospheres | UEENEEM017B | Design explosion-protected electrical systems | E, provided the following endorsements specified in the range statement are met in UEENEEM017B (Ex’d’, Ex ‘i’, Ex ‘e’, Ex ‘n’) |
| UEENEEM058A | Design explosion-protected electrical systems and installations — dust atmospheres | UEENEEM017B | Design explosion-protected electrical systems | E, provided the following endorsements specified in the range statement are met in UEENEEM017B (Ex ‘ i’, Ex ‘t’, Ex ‘p’) |
| UEENEEM059A | Design explosion-protected electrical systems and installations — pressurisation | UEENEEM017B | Design explosion-protected electrical systems | E, provided endorsement Ex ‘p’ is met in UEENEEM017B |
| UEENEEM060A | Carry out overhaul and repair of explosion-protected equipment — coal mining |  | New Unit, Not previously covered |  |
| UEENEEM061A | Carry out overhaul and repair of explosion-protected equipment — flameproof enclosures |  | New Unit, Not previously covered |  |
| UEENEEM062A | Carry out overhaul and repair of explosion-protected equipment — gas atmospheres |  | New Unit, Not previously covered |  |
| UEENEEM063A | Carry out overhaul and repair of explosion-protected equipment — dust atmospheres |  | New Unit, Not previously covered |  |
| UEENEEM064A | Conduct audit of hazardous areas installations — coal mining |  | New Unit, Not previously covered |  |
| UEENEEM065A | Conduct audit of hazardous areas installations — gas atmospheres |  | New Unit, Not previously covered |  |
| UEENEEM066A | Conduct audit of hazardous areas installations — dust atmospheres |  | New Unit, Not previously covered |  |
| UEENEEM067A | Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — coal mining |  | New Unit, Not previously covered |  |
| UEENEEM068A | Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — gas atmospheres |  | New Unit, Not previously covered |  |
| UEENEEM069A | Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — dust atmospheres |  | New Unit, Not previously covered |  |
| UEENEEM070A | Repair reeling, trailing and flexible cables |  | New Unit, Not previously covered |  |
| UEENEEM071A | Test reeling, trailing and flexible cables |  | New Unit, Not previously covered |  |
| UEENEEM072A | Inspect and fit plugs/couplers for reeling, trailing and flexible cables |  | New Unit, Not previously covered |  |
| UEENEEM073A | Verify compliance of repaired reeling, trailing and flexible cables |  | New Unit, Not previously covered |  |
| UEENEEM074A | Plan electrical installations in hazardous areas — Coal mining |  | New Unit, Not previously covered |  |
| UEENEEM075A | Design explosion-protected electrical systems — Coal mining |  | New Unit, Not previously covered |  |
| UEENEEM076A | Use and maintain the integrity of a portable gas detection device | UEENEEM003B | Use and maintain the integrity of portable gas detection devices | E |
| UEENEEM077A | Install and maintain the integrity of fixed gas detection equipment | UEENEEM005B | Install and maintain integrity of fixed gas detection equipment | E |
| UEENEEM078A | Manage compliance of hazardous areas | UEENEEM013B | Ensure the safety of hazardous areas | E |
| UEENEEM079A | Design of gas detection systems and installations | UEENEEM018B | Design gas detection systems | E |
| 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 | E |

## 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 UEE07Electrotechnology 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 units in the former Training Package (UEE07 Version 1) | Equivalent — Full, part or none |
| --- | --- | --- | --- | --- |
|  | All Existing Qualifications in UEE07 Version 1 | All existing qualifications in UEE07 version 1 remain unchanged | Refer to table mapping UEE07 Version 1 qualifications to UEE06 Version 1 for equivalences |  |
| UEENEEK025C | Solve basic problems in photovoltaic energy apparatus | UEENEEK025B | Revised version | Full |
| UEENEEK048A | Install and, configure and commission grid connected photovoltaic power systems | New Unit | New Unit | New Unit |
| UEENEEK035C | Design grid connected power supply systems | UEENEEK035B | Revised Version | Full |
| UEENEEG071C | Install and setup interval metering | UEENEEG071B | Revised Version | Full |

## 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) | Equivalence - Full, Part, No |
| --- | --- | --- | --- | --- |
| UEENEEA001B | Assemble electronic apparatus | UEENEEA001A | Assemble electronic apparatus | Part - Refer Note 1 (below). |
| UEENEEA002B | Select electronic components | UEENEEA002A | Select electronic components | Part - Refer Note 1 (below). |
| UEENEEA003B | Set up and check electronic component placement machines | UEENEEA003A | Set up and check electronic component placement machines | Part - Refer Note 1 (below). |
| UEENEEA004B | Rework electronic sub assemblies | UEENEEA004A | Rework electronic sub assemblies | Part - Refer Note 1 (below). |
| UEENEEA005B | Conduct functional and quality tests on assembled electronic apparatus | UEENEEA005A | Conduct functional and quality tests on assembled electronic apparatus | Part - Refer Note 1 (below). |
| UEENEEA006B | Apply lead-free soldering techniques | UEENEEA006A | Apply lead-free soldering techniques | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEA011A | RESERVED | UEENEEA011A | RESERVED |  |
| UEENEEA012B | Make up and assemble bus bars | UEENEEA012A | Make up and assemble bus bars | Part - Refer Note 1 (below). |
| UEENEEA013B | Assemble and wire control panels | UEENEEA013A | Assemble and wire control panels | Part - Refer Note 1 (below). |
| UEENEEB001B | Operate and maintain an amateur radio communication station | UEENEEB001A | Operate and maintain an amateur radio communication station | Part - Refer Note 1 (below). |
| UEENEEC001B | Maintain documentation | UEENEEC001A | Maintain documentation | Part - Refer Note 1 (below). |
| UEENEEC002B | Source and purchase material/parts for installation or service jobs | UEENEEC002A | Source and purchase material/parts for installation or service jobs | Part - Refer Note 1 (below). |
| UEENEEC003B | Provide quotations for installation or service jobs | UEENEEC003A | Provide quotations for installation or service jobs | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEC005B | Estimate electrotechnology projects | UEENEEC005A | Estimate electrotechnology projects | Part - Refer Note 1 (below). |
| UEENEEC006B | Prepare tender submissions for electrotechnology projects | UEENEEC006A | Prepare tender submissions for electrotechnology projects | Part - Refer Note 1 (below). |
| UEENEEC007B | Manage contract variations | UEENEEC007A | Manage contract variations | Part - Refer Note 1 (below). |
| UEENEEC008B | Receive and store materials and equipment for electrotechnology work | UEENEEC008A | Receive and store materials and equipment for electrotechnology work | Part - Refer Note 1 (below). |
| UEENEEC009B | Provide quotations for inspection and compliance audit services | UEENEEC009A | Provide quotations for inspection and compliance audit services | Part - Refer Note 1 (below). |
| UEENEEC010B | Deliver a service to customers | UEENEEC010A | Deliver a service to customers | Part - Refer Note 1 (below). |
| UEENEEC011A | RESERVED | UEENEEC011A | RESERVED |  |
| UEENEEC012B | Direct technical and non-technical enquiries to appropriate personnel | UEENEEC012A | Direct technical and non-technical enquiries to appropriate personnel | Part - Refer Note 1 (below). |
| UEENEEC013B | Participate in business equipment work and competency development activities | UEENEEC013A | Participate in business equipment work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC014B | Participate in computer equipment work and competency development activities | UEENEEC014A | Participate in computer equipment work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC015B | Participate in custom electronic installations work and competency development activities | UEENEEC015A | Participate in custom electronic installations work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC016B | Participate in voice and data communications work and competency development activities | UEENEEC016A | Participate in voice and data communications work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC017B | Participate in appliance servicing work and competency development activities | UEENEEC017A | Participate in appliance servicing work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC018B | Participate in electrical machine repair work and competency development activities | UEENEEC018A | Participate in electrical machine repair work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC019B | Participate in switchgear and control gear work and competency development activities | UEENEEC019A | Participate in switchgear and control gear work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC020B | Participate in electrical work and competency development activities | UEENEEC020A | Participate in electrical work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC021B | Participate in electronics and communications work and competency development activities | UEENEEC021A | Participate in electronics and communications work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC022B | Participate in fire protection control work and competency development activities | UEENEEC022A | Participate in fire protection control work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC023B | Participate in gaming electronic work and competency development activities | UEENEEC023A | Participate in gaming electronic work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC024B | Participate in instrumentation and control work and competency development activities | UEENEEC024A | Participate in instrumentation and control work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC025B | Participate in refrigeration and air conditioning work and competency development activities | UEENEEC025A | Participate in refrigeration and air conditioning work and competency development activities | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEC026B | Participate in security equipment work and competency development activities | UEENEEC026A | Participate in security equipment work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC027B | Participate in rail communications and networks work and competency development activities | UEENEEC027A | Participate in rail communications and networks work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC028B | Participate in hazardous areas work and competency development activities | UEENEEC028A | Participate in hazardous areas work and competency development activities | Part - Refer Note 1 (below). |
| UEENEEC029B | Participate in explosion-protected equipment overhaul work and competency development activities | UEENEEC029A | Participate in explosion-protected equipment overhaul work and competency development activities | Part - Refer Note 1 (below). |
| UEENEED001B | Use basic computer applications relevant to a workplace | UEENEED001A | Use basic computer applications relevant to a workplace | Part - Refer Note 1 (below). |
| UEENEED002B | Assemble, set up and test personal computers | UEENEED002A | Assemble, set up and test personal computers | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED003B | Evaluate and modify programs written in object oriented code | UEENEED003A | Evaluate and modify programs written in object oriented code | Part - Refer Note 1 (below). |
| UEENEED004B | Use engineering applications software | UEENEED004A | Use engineering applications software | Part - Refer Note 1 (below). |
| UEENEED005B | Enter and verify operating instructions in microprocessor equipped devices | UEENEED005A | Enter and verify operating instructions in microprocessor equipped devices | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEED010B | Set up and create content for a web server | UEENEED010A | Set up and create content for a web server | Part - Refer Note 1 (below). |
| UEENEED011B | Develop object oriented code | UEENEED011A | Develop object oriented code | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED012B | Support computer hardware and software | UEENEED012A | Support computer hardware and software | Part - Refer Note 1 (below). |
| UEENEED013B | Install and administer Unix based computers | UEENEED013A | Install and administer Unix based computers | Part - Refer Note 1 (below). |
| UEENEED014B | Design and manage enterprise networks | UEENEED014A | Design and manage enterprise networks | Part \_ Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED015B | Administer user networks | UEENEED015A | Administer user networks | Part - Refer Note 1 (below). |
| UEENEED016B | Develop network services | UEENEED016A | Develop network services | Part - Refer Note 1 (below). Also, removal of UEENEED015B pre-requisite |
| UEENEED017B | Install and configure Internetworking systems | UEENEED017A | Install and configure Internetworking systems | Part - Refer Note 1 (below). |
| UEENEED018B | Design and implement Internetworking systems | UEENEED018A | Design and implement Internetworking systems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED019B | Design and implement Internetworking systems — advanced routing | UEENEED019A | Design and implement Internetworking systems — advanced routing | Part - Refer Note 1 (below). Also, removal of all pre-requisite |
| UEENEED020B | Design and implement Internetworking systems — remote access | UEENEED020A | Design and implement Internetworking systems — remote access | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED021B | Design and implement Internetworking systems — multi-layer switching | UEENEED021A | Design and implement Internetworking systems — multi-layer switching | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED022B | Design and implement Internetworking systems — security | UEENEED022A | Design and implement Internetworking systems — security | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED023B | Design and implement Internetworking systems — wireless LANs/WANs | UEENEED023A | Design and implement Internetworking systems — wireless LANs/WANs | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED024B | Integrate multiple computer operating systems on a client server network | UEENEED024A | Integrate multiple computer operating systems on a client server network | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED025B | Design and configure Human-Machine Interface networks | UEENEED025A | Design and configure Human-Machine Interface networks | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED026B | Design a computer based control system | UEENEED026A | Design a computer based control system | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED027B | Develop structured programs to control sub systems to access external devices | UEENEED027A | Develop structured programs to control sub systems to access external devices | Part - Refer Note 1 (below). |
| UEENEED028B | Develop and test basic specification code for micro-controller equipped devices | UEENEED028A | Develop and test basic specification code for micro-controller equipped devices | Part - Refer Note 1 (below). |
| UEENEED029B | Develop basic web pages for engineering applications | UEENEED029A | Develop basic web pages for engineering applications | Part - Refer Note 1 (below). |
| UEENEED030B | Select, install, configure and test multimedia devices | UEENEED030A | Select, install, configure and test multimedia devices | Part - Refer Note 1 (below). |
| UEENEED031B | Develop and validate basic integrated systems | UEENEED031A | Develop and validate basic integrated systems | Part - Refer Note 1 (below). |
| UEENEED032B | Design integrated systems | UEENEED032A | Design integrated systems | Part - Refer Note 1 (below). |
| UEENEED033B | Design complex integrated systems | UEENEED033A | Design complex integrated systems | Part - Refer Note 1 (below). |
| UEENEED034B | Configure and maintain industrial control system networks | UEENEED034A | Configure and maintain industrial control system networks | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| 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 | Part - Refer Note 1 (below). |
| UEENEED044B | Commission computer systems | UEENEED044A | Commission computer systems | Part - Refer Note 1 (below). |
| UEENEED045B | Modify-redesign of computer system | UEENEED045A | Modify-redesign of computer system | Part - Refer Note 1 (below). |
| UEENEED046B | Set up and configure basic local area network | UEENEED046A | Set up and configure basic local area network | Part - Refer Note 1 (below). |
| UEENEED047B | Manage computer projects | UEENEED047A | Manage computer projects | Part - Refer Note 1 (below). |
| UEENEED048B | Plan computer systems projects | UEENEED048A | Plan computer systems projects | Part - Refer Note 1 (below). |
| UEENEED049A | RESERVED | UEENEED049A | RESERVED |  |
| UEENEED050B | Develop control programs for micro-computer equipped devices | UEENEED050A | Develop control programs for micro-computer equipped devices | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED051B | Provide programming solution for engineering problems | UEENEED051A | Provide programming solution for engineering problems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED052B | Design embedded controller systems | UEENEED052A | Design embedded controller systems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEED053B | Set up and test biometric devices | UEENEED053A | Set up and test biometric devices | Part - Refer Note 1 (below). |
| UEENEED054B | Analyse and implement biometric techniques and applications | UEENEED054A | Analyse and implement biometric techniques and applications | Part - Refer Note 1 (below). |
| UEENEED055B | Develop and validate biometric systems installation instructions | UEENEED055A | Develop and validate biometric systems installation instructions | Part - Refer Note 1 (below). |
| UEENEEE001B | Apply OHS practices in the workplace | UEENEEE001A | Apply OHS practices in the workplace | Part - Refer Note 1 (below). |
| UEENEEE002B | Dismantle, assemble and fabricate electrotechnology components | UEENEEE002A | Dismantle, assemble and fabricate electrotechnology components | Part - Refer Note 1 (below). |
| UEENEEE003B | Solve problems in extra-low voltage single path circuits | UEENEEE003A | Solve problems in extra-low voltage single path circuits | Part - Refer Note 1 (below). |
| UEENEEE004B | Solve problems in multiple path d.c. circuits | UEENEEE004A | Solve problems in multiple path d.c. circuits | Part - Refer Note 1 (below). |
| UEENEEE005B | Fix and secure equipment | UEENEEE005A | Fix and secure equipment | Part - Refer Note 1 (below). |
| UEENEEE006B | Apply methods to maintain currency of industry developments | UEENEEE006A | Apply methods to maintain currency of industry developments | Part - Refer Note 1 (below). |
| UEENEEE007B | Use drawings, diagrams, schedules and manuals | UEENEEE007A | Use drawings, diagrams, schedules and manuals | Part - Refer Note 1 (below). |
| UEENEEE008B | Lay wiring/cabling and terminate accessories for extra-low voltage circuits | UEENEEE008A | Lay wiring/cabling and terminate accessories for extra-low voltage circuits | Part - Refer Note 1 (below). |
| UEENEEE009B | Comply with scheduled and preventative maintenance program processes | UEENEEE009A | Comply with scheduled and preventative maintenance program processes | Part - Refer Note 1 (below). |
| UEENEEE010B | Develop and implement maintenance programs | UEENEEE010A | Develop and implement maintenance programs | Part - Refer Note 1 (below). |
| UEENEEE011B | Manage risk in electrotechnology activities | UEENEEE011A | Manage risk in electrotechnology activities | Part - Refer Note 1 (below). |
| UEENEEE012B | Manage electrotechnology projects | UEENEEE012A | Manage electrotechnology projects | Part - Refer Note 1 (below). |
| UEENEEE013B | Plan electrotechnology projects | UEENEEE013A | Plan electrotechnology projects | Part - Refer Note 1 (below). |
| UEENEEE014B | Supervise and coordinate work activities | UEENEEE014A | Supervise and coordinate work activities | Part - Refer Note 1 (below). |
| UEENEEE015B | Develop design briefs for electrotechnology projects | UEENEEE015A | Develop design briefs for electrotechnology projects | Part - Refer Note 1 (below). |
| UEENEEE016B | Write specifications for electrotechnology projects | UEENEEE016A | Write specifications for electrotechnology projects | Part - Refer Note 1 (below). |
| UEENEEE017B | Implement and monitor OHS policies and procedures | UEENEEE017A | Implement and monitor OHS policies and procedures | Part - Refer Note 1 (below). |
| UEENEEE018B | Establish, maintain and evaluate OHS systems | UEENEEE018A | Establish, maintain and evaluate OHS systems | Part - Refer Note 1 (below). |
| UEENEEE019B | Solve problems in multiple path a.c. circuits | UEENEEE019A | Solve problems in multiple path a.c. circuits | Part - Refer Note 1 (below). |
| UEENEEE020B | Provide basic instruction in the use of electrotechnology apparatus | UEENEEE020A | Provide basic instruction in the use of electrotechnology apparatus | Part - Refer Note 1 (below). |
| UEENEEE021B | Plan an integrated cabling system | UEENEEE021A | Plan an integrated cabling system | Part - Refer Note 1 (below). |
| UEENEEE022B | Carry out preparatory electrotechnology work activities | UEENEEE022A | Carry out preparatory electrotechnology work activities | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEE023B | Solve basic problems in electronic and digital equipment | UEENEEE023A | Solve basic problems in electronic and digital equipment | Part - Refer Note 1 (below). |
| UEENEEE024C | Compile and produce an electrotechnology report | UEENEEE024A | Compile and produce an electrotechnology report | Part - Refer Note 1 (below). |
| UEENEEE025B | Solve problems in complex multiple path circuits | UEENEEE025A | Solve problems in complex multiple path circuits | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEE026B | Provide computational solutions to basic engineering problems | UEENEEE026A | Provide computational solutions to basic engineering problems | Part - Refer Note 1 (below). |
| UEENEEE027B | Use advanced computational processes to provide solutions to engineering problems | UEENEEE027A | Use advanced computational processes to provide solutions to engineering problems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEE028B | Develop engineering solutions to photonic problems | UEENEEE028A | Develop engineering solutions to photonic problems | Part - Refer Note 1 (below). |
| UEENEEE029B | Solve electrotechnical problems | UEENEEE029A | Solve electrotechnical problems | Part - Refer Note 1 (below). |
| UEENEEE030B | Provide solutions to and report on routine electrotechnology problems | UEENEEE030A | Provide solutions to and report on routine electrotechnology problems | Part - Refer Note 1 (below). |
| UEENEEE031A | RESERVED | UEENEEE031A | RESERVED |  |
| UEENEEE032B | Document occupational hazards and risks in computer systems | UEENEEE032A | Document occupational hazards and risks in computer systems | Part - Refer Note 1 (below). |
| UEENEEE033B | Document occupational hazards and risks in electrical | UEENEEE033A | Document occupational hazards and risks in electrical | Part - Refer Note 1 (below). |
| UEENEEE034B | Document occupational hazards and risks in electronics | UEENEEE034A | Document occupational hazards and risks in electronics | Part - Refer Note 1 (below). |
| UEENEEE035B | Document occupational hazards and risks in instrumentation | UEENEEE035A | Document occupational hazards and risks in instrumentation | Part - Refer Note 1 (below). |
| UEENEEE036B | Document occupational hazards and risks in refrigeration and Air-conditioning | UEENEEE036A | Document occupational hazards and risks in refrigeration and Air-conditioning | Part - Refer Note 1 (below). |
| UEENEEE037B | Document occupational hazards and risks in electrotechnology | UEENEEE037A | Document occupational hazards and risks in electrotechnology | Part - Refer Note 1 (below). |
| UEENEEE038B | Participate in development and follow a personal competency development plan | UEENEEE038A | Participate in development and follow a personal competency development plan | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEE041B | Use of routine equipment/plant/technologies in an electrotechnology environment | UEENEEE041A | Use of routine equipment/plant/technologies in an electrotechnology environment | Part - Refer Note 1 (below). |
| UEENEEE042B | Produce routine products for carrying out electrotechnology work activities | UEENEEE042A | Produce routine products for carrying out electrotechnology work activities | Part - Refer Note 1 (below). |
| UEENEEE043B | Produce routine tools/devices for carrying out electrotechnology work activities | UEENEEE043A | Produce routine tools/devices for carrying out electrotechnology work activities | Part - Refer Note 1 (below). |
| UEENEEE044B | Apply technologies and concepts to electrotechnology work activities | UEENEEE044A | Apply technologies and concepts to electrotechnology work activities | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEE047B | Identify building techniques, methods and materials used in electrotechnology work activities | UEENEEE047A | Identify building techniques, methods and materials used in electrotechnology work activities | Part - Refer Note 1 (below). |
| UEENEEE048C | Carry out routine work activities in an electrotechnology environment | UEENEEE048A | Carry out routine work activities in an electrotechnology environment | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEE050B | Undertake computations in an electrotechnology environment | UEENEEE050A | Undertake computations in an electrotechnology environment | Part - Refer Note 1 (below). |
| UEENEEE051B | Transport apparatus and materials | UEENEEE051A | Transport apparatus and materials | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEE061B | Analyse static and dynamic parameters of equipment | UEENEEE061A | Analyse static and dynamic parameters of equipment | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEE062B | Select drive components for equipment design | UEENEEE062A | Select drive components for equipment design | Part - Refer Note 1 (below). |
| UEENEEE063B | Analyse materials for suitability in equipment | UEENEEE063A | Analyse materials for suitability in equipment | Part - Refer Note 1 (below). |
| UEENEEE064B | Design machine drives and production layout plans | UEENEEE064A | Design machine drives and production layout plans | Part - Refer Note 1 (below). |
| UEENEEE065A | RESERVED | UEENEEE065A | RESERVED |  |
| UEENEEE066A | RESERVED | UEENEEE066A | RESERVED |  |
| UEENEEE067A | RESERVED | UEENEEE067A | RESERVED |  |
| UEENEEE068A | RESERVED | UEENEEE068A | RESERVED |  |
| UEENEEE069A | RESERVED | UEENEEE069A | RESERVED |  |
| UEENEEE070B | Write specifications for computer systems engineering projects | UEENEEE070A | Write specifications for computer systems engineering projects | Part - Refer Note 1 (below). |
| UEENEEE071B | Write specifications for electrical engineering projects | UEENEEE071A | Write specifications for electrical engineering projects | Part - Refer Note 1 (below). |
| UEENEEE072B | Write specifications for electronics and communications engineering projects | UEENEEE072A | Write specifications for electronics and communications engineering projects | Part - Refer Note 1 (below). |
| UEENEEE073B | Write specifications for refrigeration and air conditioning engineering projects | UEENEEE073A | Write specifications for refrigeration and air conditioning engineering projects | Part - Refer Note 1 (below). |
| UEENEEE074B | Write specifications for renewable energy engineering projects | UEENEEE074A | Write specifications for renewable energy engineering projects | Part - Refer Note 1 (below). |
| UEENEEE075B | Write specifications for industrial electronics and control projects | UEENEEE075A | Write specifications for industrial electronics and control projects | Part - Refer Note 1 (below). |
| UEENEEE076A | RESERVED | UEENEEE076A | RESERVED |  |
| UEENEEE077B | Write specifications for automated systems projects | UEENEEE077A | Write specifications for automated systems projects | Part - Refer Note 1 (below). |
| UEENEEE078B | Contribute to risk management in electrotechnology systems | UEENEEE078A | Contribute to risk management in electrotechnology systems | Part - Refer Note 1 (below). |
| UEENEEF001B | Lay and connect cabling for direct access to telecommunication services | UEENEEF001A | Lay and connect cabling for direct access to telecommunication services | Part - Refer Note 1 (below). |
| UEENEEF002B | Lay and connect cables for multiple access to telecommunication services | UEENEEF002A | Lay and connect cables for multiple access to telecommunication services | Part - Refer Note 1 (below). |
| UEENEEF003B | Install and maintain cabling for telecommunication services in lifts | UEENEEF003A | Install and maintain cabling for telecommunication services in lifts | Part - Refer Note 1 (below). |
| UEENEEF004B | Install and modify performance data communication structured cabling | UEENEEF004A | Install and modify performance data communication structured cabling | Part - Refer Note 1 (below). |
| UEENEEF005B | Install and modify performance data communication optical fibre cabling | UEENEEF005A | Install and modify performance data communication optical fibre cabling | Part - Refer Note 1 (below). |
| UEENEEF006B | Solve problems in data and voice communications circuits | UEENEEF006A | Solve problems in data and voice communications circuits | Part - Refer Note 1 (below). |
| UEENEEF007B | Set up the wireless capabilities of communications and data storage devices | UEENEEF007A | Set up the wireless capabilities of communications and data storage devices | Part - Refer Note 1 (below). |
| UEENEEF008B | Select and arrange equipment for wireless networks | UEENEEF008A | Select and arrange equipment for wireless networks | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEF009B | Install and connect voice and data communications equipment | UEENEEF009A | Install and connect voice and data communications equipment | Part - Refer Note 1 (below). |
| UEENEEF010B | Select and arrange equipment for local area networks | UEENEEF010A | Select and arrange equipment for local area networks | Part - Refer Note 1 (below). |
| UEENEEF011B | Test, report and rectify faults in voice and data installations | UEENEEF011A | Test, report and rectify faults in voice and data installations | Part - Refer Note 1 (below). |
| UEENEEF012B | Install aerial communication cables | UEENEEF012A | Install aerial communication cables | Part - Refer Note 1 (below). |
| UEENEEF013B | Install below ground communication cables | UEENEEF013A | Install below ground communication cables | Part - Refer Note 1 (below). |
| UEENEEF014B | Set up and configure basic data communications systems | UEENEEF014A | Set up and configure basic data communications systems | Part - Refer Note 1 (below). |
| UEENEEF015B | Assemble and connect communication frames and cabinets | UEENEEF015A | Assemble and connect communication frames and cabinets | Part - Refer Note 1 (below). |
| UEENEEG001B | Solve problems in electromagnetic circuits | UEENEEG001A | Solve problems in electromagnetic circuits | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEG002B | Solve problems in single and three phase low voltage circuits | UEENEEG002A | Solve problems in single and three phase low voltage circuits | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEG003B | Install wiring and accessories for low voltage circuits | UEENEEG003A | Install wiring and accessories for low voltage circuits | Part - Refer Note 1 (below). |
| UEENEEG004B | Install low voltage electrical apparatus and associated equipment | UEENEEG004A | Install low voltage electrical apparatus and associated equipment | Part - Refer Note 1 (below). |
| UEENEEG005B | Verify compliance and functionality of general electrical installations | UEENEEG005A | Verify compliance and functionality of general electrical installations | Part - Refer Note 1 (below). |
| UEENEEG006A | RESERVED | UEENEEG006A | RESERVED |  |
| UEENEEG007B | Select and arrange equipment for general electrical installations | UEENEEG007A | Select and arrange equipment for general electrical installations | Part - Refer Note 1 (below). |
| UEENEEG008B | Find and repair faults in electrical apparatus and circuits | UEENEEG008A | Find and repair faults in electrical apparatus and circuits | Part - Refer Note 1 (below). |
| UEENEEG009B | Develop and connect control circuits | UEENEEG009A | Develop and connect control circuits | Part - Refer Note 1 (below). |
| UEENEEG010B | Find and repair faults in d.c. electrical apparatus and circuits | UEENEEG010A | Find and repair faults in d.c. electrical apparatus and circuits | Part - Refer Note 1 (below). |
| UEENEEG011B | Carry out basic repairs to electrical apparatus | UEENEEG011A | Carry out basic repairs to electrical apparatus | Part - Refer Note 1 (below). |
| UEENEEG012B | Solve fundamental problems in electrical systems | UEENEEG012A | Solve fundamental problems in electrical systems | Part - Refer Note 1 (below). |
| UEENEEG013B | Install and maintain emergency systems. | UEENEEG013A | Install and maintain emergency systems. | Part - Refer Note 1 (below). |
| UEENEEG014B | Develop plans and compliance policies to conduct a contracting business | UEENEEG014A | Develop plans and compliance policies to conduct a contracting business | Part - Refer Note 1 (below). |
| UEENEEG015B | Find and rectify faults in energy supply network equipment | UEENEEG015A | Find and rectify faults in energy supply network equipment | Part - Refer Note 1 (below). |
| UEENEEG016B | Diagnose and rectify faults in lifts systems | UEENEEG016A | Diagnose and rectify faults in lifts systems | Part - Refer Note 1 (below). |
| UEENEEG017B | Install electrical power and control equipment for rail network signalling | UEENEEG017A | Install electrical power and control equipment for rail network signalling | Part - Refer Note 1 (below). |
| UEENEEG018B | Maintain operation of electrical mining equipment | UEENEEG018A | Maintain operation of electrical mining equipment | Part - Refer Note 1 (below). |
| UEENEEG019B | Maintain operation of electrical marine equipment | UEENEEG019A | Maintain operation of electrical marine equipment | Part - Refer Note 1 (below). |
| UEENEEG020B | Select and arrange equipment for special electrical installations | UEENEEG020A | Select and arrange equipment for special electrical installations | Part - Refer Note 1 (below). |
| UEENEEG021B | Verify compliance and functionality of special electrical installations | UEENEEG021A | Verify compliance and functionality of special electrical installations | Part - Refer Note 1 (below). Also, removal of pre-requisite UEENEEG020B |
| UEENEEG022B | Conduct compliance inspection of single phase electrical installations | UEENEEG022A | Conduct compliance inspection of single phase electrical installations | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEG024B | Conduct compliance inspection of special electrical installations | UEENEEG024A | Conduct compliance inspection of special electrical installations | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEG028B | Plan switchboard and control panel layouts | UEENEEG028A | Plan switchboard and control panel layouts | Part - Refer Note 1 (below). |
| UEENEEG029B | Overhaul and repair major switchgear/controlgear | UEENEEG029A | Overhaul and repair major switchgear/controlgear | Part - Refer Note 1 (below). |
| UEENEEG030B | Design switchboards rated for high fault levels | UEENEEG030A | Design switchboards rated for high fault levels | Part - Refer Note 1 (below). |
| UEENEEG031B | Evaluate performance of electrical apparatus | UEENEEG031A | Evaluate performance of electrical apparatus | Part - Refer Note 1 (below). |
| UEENEEG032B | Carry out electrical field testing and report findings | UEENEEG032A | Carry out electrical field testing and report findings | Part - Refer Note 1 (below). |
| UEENEEG033A | RESERVED | UEENEEG033A | RESERVED |  |
| UEENEEG034B | Perform high voltage field switching to a given schedule | UEENEEG034A | Perform high voltage field switching to a given schedule | Part - Refer Note 1 (below). |
| UEENEEG035B | Diagnose and rectify faults in a.c. motor drive systems | UEENEEG035A | Diagnose and rectify faults in a.c. motor drive systems | Part - Refer Note 1 (below). |
| UEENEEG036B | Diagnose and rectify faults in d.c. motor drive systems | UEENEEG036A | Diagnose and rectify faults in d.c. motor drive systems | Part - Refer Note 1 (below). |
| UEENEEG037B | Diagnose and rectify faults in energy supply apparatus | UEENEEG037A | Diagnose and rectify faults in energy supply apparatus | Part - Refer Note 1 (below). |
| UEENEEG038B | Diagnose and rectify faults in electrical energy distribution systems | UEENEEG038A | Diagnose and rectify faults in electrical energy distribution systems | Part - Refer Note 1 (below). |
| UEENEEG039B | Diagnose and rectify faults in distributed generation systems | UEENEEG039A | Diagnose and rectify faults in distributed generation systems | Part - Refer Note 1 (below). |
| UEENEEG040B | Develop engineering solutions for energy supply power transformer problems | UEENEEG040A | Develop engineering solutions for energy supply power transformer problems | Part - Refer Note 1 (below). |
| UEENEEG041B | Diagnose and rectify faults in servo drive systems | UEENEEG041A | Diagnose and rectify faults in servo drive systems | Part - Refer Note 1 (below). |
| UEENEEG042B | Diagnose and rectify faults in electrical energy supply transmission systems | UEENEEG042A | Diagnose and rectify faults in electrical energy supply transmission systems | Part - Refer Note 1 (below). |
| UEENEEG043B | Develop engineering solution for synchronous machine problems | UEENEEG043A | Develop engineering solution for synchronous machine problems | Part - Refer Note 1 (below). |
| UEENEEG044B | Develop engineering solutions for d.c. machine problems | UEENEEG044A | Develop engineering solutions for d.c. machine problems | Part - Refer Note 1 (below). |
| UEENEEG045B | Develop engineering solutions for induction motor problems | UEENEEG045A | Develop engineering solutions for induction motor problems | Part - Refer Note 1 (below). |
| UEENEEG046B | Develop engineering solutions for energy supply system protection problems | UEENEEG046A | Develop engineering solutions for energy supply system protection problems | Part - Refer Note 1 (below). |
| UEENEEG047B | Provide computational solutions to power engineering problems | UEENEEG047A | Provide computational solutions to power engineering problems | Part - Refer Note 1 (below). |
| UEENEEG048B | Solve problems in complex multiple path power circuits | UEENEEG048A | Solve problems in complex multiple path power circuits | Part - Refer Note 1 (below). |
| UEENEEG049B | Solve problems in complex polyphase power circuits | UEENEEG049A | Solve problems in complex polyphase power circuits | Part - Refer Note 1 (below). |
| UEENEEG050B | Wind coils | UEENEEG050A | Wind coils | Part - Refer Note 1 (below). |
| UEENEEG051B | Place and connect coils | UEENEEG051A | Place and connect coils | Part - Refer Note 1 (below). |
| UEENEEG052B | Rewind single phase induction machines | UEENEEG052A | Rewind single phase induction machines | Part - Refer Note 1 (below). |
| UEENEEG053B | Rewind three phase induction machines rated for low voltage | UEENEEG053A | Rewind three phase induction machines rated for low voltage | Part - Refer Note 1 (below). |
| UEENEEG054B | Rewind direct current machines rated for low voltage | UEENEEG054A | Rewind direct current machines rated for low voltage | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEG057B | Conduct electrical tests on low voltage electrical machines | UEENEEG057A | Conduct electrical tests on low voltage electrical machines | Part - Refer Note 1 (below). |
| UEENEEG058B | Conduct electrical tests on high voltage electrical machines | UEENEEG058A | Conduct electrical tests on high voltage electrical machines | Part - Refer Note 1 (below). |
| UEENEEG059B | Conduct mechanical tests on electrical machines | UEENEEG059A | Conduct mechanical tests on electrical machines | Part - Refer Note 1 (below). |
| UEENEEG060B | Evaluate performance of electrical machines | UEENEEG060A | Evaluate performance of electrical machines | Part - Refer Note 1 (below). |
| UEENEEG061B | Design and develop modifications to electrical machines | UEENEEG061A | Design and develop modifications to electrical machines | Part - Refer Note 1 (below). |
| UEENEEG062B | Set up and place electrical apparatus and associated circuits into service | UEENEEG062A | Set up and place electrical apparatus and associated circuits into service | Part - Refer Note 1 (below). |
| UEENEEG063A | RESERVED | UEENEEG063A | RESERVED |  |
| UEENEEG064B | Repair mechanical components of electrical machines | UEENEEG064A | Repair mechanical components of electrical machines | Part - Refer Note 1 (below). |
| UEENEEG065B | Maintain and service traction lifts | UEENEEG065A | Maintain and service traction lifts | Part - Refer Note 1 (below). |
| UEENEEG066B | Installation and maintenance of escalators, moving walks and tread ways | UEENEEG066A | Installation and maintenance of escalators, moving walks and tread ways | Part - Refer Note 1 (below). |
| UEENEEG067B | Align and install lift equipment | UEENEEG067A | Align and install lift equipment | Part - Refer Note 1 (below). |
| UEENEEG068B | Diagnose and rectify faults in complex lifts systems | UEENEEG068A | Diagnose and rectify faults in complex lifts systems | Part - Refer Note 1 (below). |
| UEENEEG069B | Manage electrical projects | UEENEEG069A | Manage electrical projects | Part - Refer Note 1 (below). |
| UEENEEG070B | Plan electrical projects | UEENEEG070A | Plan electrical projects | Part - Refer Note 1 (below). |
| UEENEEG071B | Install and set up interval metering | UEENEEG071A | Install and set up interval metering | Part - Refer Note 1 (below). |
| UEENEEG072B | Investigate and report on electrical incidents | UEENEEG072A | Investigate and report on electrical incidents | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEH002B | Carry out basic repairs to electronic apparatus by replacement of components | UEENEEH002A | Carry out basic repairs to electronic apparatus by replacement of components | Part - Refer Note 1 (below). Also, removal of pre-requisites UEENEEE004B and UEENEEE007B |
| UEENEEH003B | Carry out routine repairs to business equipment | UEENEEH003A | Carry out routine repairs to business equipment | Part - Refer Note 1 (below). |
| UEENEEH004B | Set up and test residential audio/video equipment | UEENEEH004A | Set up and test residential audio/video equipment | Part - Refer Note 1 (below). |
| UEENEEH005B | Verify compliance and functionality of custom electronic installations | UEENEEH005A | Verify compliance and functionality of custom electronic installations | Part - Refer Note 1 (below). |
| UEENEEH006B | Assemble and set up fixed audio/video components and systems in buildings and premises | UEENEEH006A | Assemble and set up fixed audio/video components and systems in buildings and premises | Part - Refer Note 1 (below). |
| UEENEEH007B | Carry out repairs of predictable faults in general electronic apparatus | UEENEEH007A | Carry out repairs of predictable faults in general electronic apparatus | Part - Refer Note 1 (below). |
| UEENEEH008B | Assemble and erect reception antennae and signal distribution equipment | UEENEEH008A | Assemble and erect reception antennae and signal distribution equipment | Part - Refer Note 1 (below). |
| UEENEEH009B | Set up and test gaming/games equipment | UEENEEH009A | Set up and test gaming/games equipment | Part - Refer Note 1 (below). |
| UEENEEH010B | Install commercial audio/video system components | UEENEEH010A | Install commercial audio/video system components | Part - Refer Note 1 (below). |
| UEENEEH011B | Solve problems in d.c. power supplies with single phase input | UEENEEH011A | Solve problems in d.c. power supplies with single phase input | Part - Refer Note 1 (below). Also, removal of pre-requisite UEENEEH001B. |
| UEENEEH012B | Solve problems in digital components of electronic apparatus | UEENEEH012A | Solve problems in digital components of electronic apparatus | Part - Refer Note 1 (below). Also, removal of pre-requisite UEENEEH001B and UEENEEH070B |
| UEENEEH013B | Solve problems in amplifier sections of electronic apparatus | UEENEEH013A | Solve problems in amplifier sections of electronic apparatus | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH014B | Solve problems in frequency dependent circuits | UEENEEH014A | Solve problems in frequency dependent circuits | Part - Refer Note 1 (below). Also, inclusion of 'or UEENEEH069B' in pre-requisite statement |
| UEENEEH015B | Solve problems in microprocessor based hardware and firmware | UEENEEH015A | Solve problems in microprocessor based hardware and firmware | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| 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 | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEH018B | Find and repair faults in electronic apparatus | UEENEEH018A | Find and repair faults in electronic apparatus | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH019B | Carry out repairs of predictable faults in television receivers | UEENEEH019A | Carry out repairs of predictable faults in television receivers | Part - Refer Note 1 (below). |
| UEENEEH020B | Find and repair faults in gaming and games equipment | UEENEEH020A | Find and repair faults in gaming and games equipment | Part - Refer Note 1 (below). |
| UEENEEH021B | Find and repair faults in high volume office equipment | UEENEEH021A | Find and repair faults in high volume office equipment | Part - Refer Note 1 (below). |
| UEENEEH022B | Find and repair faults in remote control apparatus | UEENEEH022A | Find and repair faults in remote control apparatus | Part - Refer Note 1 (below). |
| UEENEEH023B | Find and repair faults in microwave heating apparatus | UEENEEH023A | Find and repair faults in microwave heating apparatus | Part - Refer Note 1 (below). |
| UEENEEH024B | Carry out repairs of predictable faults in audio components | UEENEEH024A | Carry out repairs of predictable faults in audio components | Part - Refer Note 1 (below). |
| UEENEEH025B | Provide solutions to single phase electronic power control problems | UEENEEH025A | Provide solutions to single phase electronic power control problems | Part - Refer Note 1 (below). |
| UEENEEH026B | Provide solutions to polyphase electronic power control problems | UEENEEH026A | Provide solutions to polyphase electronic power control problems | Part - Refer Note 1 (below). |
| UEENEEH027B | Commission commercial radio frequency (RF) transmission and reception systems | UEENEEH027A | Commission commercial radio frequency (RF) transmission and reception systems | Part - Refer Note 1 (below). |
| UEENEEH028B | Install microwave and antennae and waveguides | UEENEEH028A | Install microwave and antennae and waveguides | Part - Refer Note 1 (below). |
| UEENEEH029B | Diagnose and rectify faults in navigation systems | UEENEEH029A | Diagnose and rectify faults in navigation systems | Part - Refer Note 1 (below). |
| UEENEEH030B | Diagnose and rectify faults in satellite-based surveillance and observation systems | UEENEEH030A | Diagnose and rectify faults in satellite-based surveillance and observation systems | Part - Refer Note 1 (below). |
| UEENEEH031B | Diagnose and rectify faults in radar apparatus and systems | UEENEEH031A | Diagnose and rectify faults in radar apparatus and systems | Part - Refer Note 1 (below). |
| UEENEEH032B | Diagnose and rectify faults in global positioning systems | UEENEEH032A | Diagnose and rectify faults in global positioning systems | Part - Refer Note 1 (below). |
| UEENEEH033B | Diagnose and rectify faults in telecommunication apparatus and systems | UEENEEH033A | Diagnose and rectify faults in telecommunication apparatus and systems | Part - Refer Note 1 (below). |
| UEENEEH034B | Diagnose and rectify faults in electronic medical equipment | UEENEEH034A | Diagnose and rectify faults in electronic medical equipment | Part - Refer Note 1 (below). |
| UEENEEH035B | Design custom electronic installations | UEENEEH035A | Design custom electronic installations | Part - Refer Note 1 (below). |
| UEENEEH036B | Design commercial audio/video installations | UEENEEH036A | Design commercial audio/video installations | Part - Refer Note 1 (below). |
| UEENEEH037B | Program and commission commercial audio/video systems | UEENEEH037A | Program and commission commercial audio/video systems | Part - Refer Note 1 (below). |
| UEENEEH038B | Find and repair faults in complex power supplies | UEENEEH038A | Find and repair faults in complex power supplies | Part - Refer Note 1 (below). |
| UEENEEH039B | Solve problems in basic amplifier circuits | UEENEEH039A | Solve problems in basic amplifier circuits | Part - Refer Note 1 (below). Also, removal of pre-requisite UEENEEH070BA |
| UEENEEH040B | Diagnose and rectify faults in sonar apparatus and systems | UEENEEH040A | Diagnose and rectify faults in sonar apparatus and systems | Part - Refer Note 1 (below). |
| UEENEEH041B | Manage and implement electronic projects | UEENEEH041A | Manage and implement electronic projects | Part - Refer Note 1 (below). |
| UEENEEH042B | Solve problems in oscillator sections of electronic apparatus | UEENEEH042A | Solve problems in oscillator sections of electronic apparatus | Part - Refer Note 1 (below). Also, removal of pre-requisite UEENEEE007B. |
| UEENEEH043B | Diagnose and rectify faults in digital subsystems of electronic controls | UEENEEH043A | Diagnose and rectify faults in digital subsystems of electronic controls | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH044B | Diagnose and rectify faults in analogue circuits and components in electronic control systems | UEENEEH044A | Diagnose and rectify faults in analogue circuits and components in electronic control systems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH045B | Develop solutions to analogue electronic problems | UEENEEH045A | Develop solutions to analogue electronic problems | Part - Refer Note 1 (below). |
| UEENEEH046B | Solve fundamental problems in electronic communications systems | UEENEEH046A | Solve fundamental problems in electronic communications systems | Part - Refer Note 1 (below). |
| UEENEEH047B | Assess compliance of electronic apparatus | UEENEEH047A | Assess compliance of electronic apparatus | Part - Refer Note 1 (below). |
| UEENEEH048B | Design and develop advanced digital systems | UEENEEH048A | Design and develop advanced digital systems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH049B | Develop solutions to audio electronic problems | UEENEEH049A | Develop solutions to audio electronic problems | Part - Refer Note 1 (below). |
| UEENEEH050B | Assemble and set up basic wired and wireless security systems | UEENEEH050A | Assemble and set up basic wired and wireless security systems | Part - Refer Note 1 (below). |
| UEENEEH051B | Install large wired and wireless security systems | UEENEEH051A | Install large wired and wireless security systems | Part - Refer Note 1 (below). |
| UEENEEH052B | Enter instructions and test basic wired and wireless security systems | UEENEEH052A | Enter instructions and test basic wired and wireless security systems | Part - Refer Note 1 (below). |
| UEENEEH053B | Program and test large wired and wireless security systems | UEENEEH053A | Program and test large wired and wireless security systems | Part - Refer Note 1 (below). |
| UEENEEH054B | Program and commission commercial security alarm systems | UEENEEH054A | Program and commission commercial security alarm systems | Part - Refer Note 1 (below). |
| UEENEEH055B | Program and commission commercial security access control systems | UEENEEH055A | Program and commission commercial security access control systems | Part - Refer Note 1 (below). |
| UEENEEH056B | Program and commission commercial security closed circuit television (CCTV) systems | UEENEEH056A | Program and commission commercial security closed circuit television (CCTV) systems | Part - Refer Note 1 (below). |
| UEENEEH057B | Develop basic integrated security systems plan | UEENEEH057A | Develop basic integrated security systems plan | Part - Refer Note 1 (below). |
| UEENEEH058B | Design integrated security systems for a single site | UEENEEH058A | Design integrated security systems for a single site | Part - Refer Note 1 (below). |
| UEENEEH059B | Design integrated complex security systems | UEENEEH059A | Design integrated complex security systems | Part - Refer Note 1 (below). |
| UEENEEH060B | Plan electronic projects | UEENEEH060A | Plan electronic projects | Part - Refer Note 1 (below). |
| UEENEEH061B | Position and terminate fire detection and warning system apparatus | UEENEEH061A | Position and terminate fire detection and warning system apparatus | Part - Refer Note 1 (below). |
| UEENEEH062B | Verify compliance and functionality of fire protection installations | UEENEEH062A | Verify compliance and functionality of fire protection installations | Part - Refer Note 1 (below). |
| UEENEEH063B | Enter and verify programs in preparation for commissioning fire protection systems | UEENEEH063A | Enter and verify programs in preparation for commissioning fire protection systems | Part - Refer Note 1 (below). |
| UEENEEH064B | Commission commercial fire protection systems | UEENEEH064A | Commission commercial fire protection systems | Part - Refer Note 1 (below). |
| UEENEEH065B | Find and repair faults in fire protection systems | UEENEEH065A | Find and repair faults in fire protection systems | Part - Refer Note 1 (below). |
| UEENEEH066B | Fault find Microcontroller based hardware | UEENEEH066A | Fault find Microcontroller based hardware | Part - Refer Note 1 (below). |
| UEENEEH067B | Commission electronics and communications systems | UEENEEH067A | Commission electronics and communications systems | Part - Refer Note 1 (below). |
| UEENEEH068B | Modify-redesign of electronics and communications system | UEENEEH068A | Modify-redesign of electronics and communications system | Part - Refer Note 1 (below). |
| UEENEEH069B | Solve problems in electronic circuits | UEENEEH069A | Solve problems in electronic circuits | Part - Refer Note 1 (below). |
| UEENEEH070B | Terminate and connect components, conductors, wiring and cables for electronic circuits | UEENEEH070A | Terminate and connect components, conductors, wiring and cables for electronic circuits | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH071B | Find and repair faults in television receivers | UEENEEH071A | Find and repair faults in television receivers | Part - Refer Note 1 (below). |
| UEENEEH072B | Find and repair faults in the RF sections of electronic apparatus | UEENEEH072A | Find and repair faults in the RF sections of electronic apparatus | Part - Refer Note 1 (below). Also, removal of pre-requisites UEENEEH012B; UEENEEH013B and UEENEEH038B. Inclusion of pre-requisite UEENEEH046B |
| UEENEEH073B | Find and repair faults in professional audio reproduction components | UEENEEH073A | Find and repair faults in professional audio reproduction components | Part - Refer Note 1 (below). |
| UEENEEH074B | Find and repair faults in audio/video recording equipment | UEENEEH074A | Find and repair faults in audio/video recording equipment | Part - Refer Note 1 (below). |
| UEENEEH075B | Find and rectify faults and malfunctions in security system installations | UEENEEH075A | Find and rectify faults and malfunctions in security system installations | Part - Refer Note 1 (below). |
| UEENEEH076B | Diagnose and rectify faults in display circuits | UEENEEH076A | Diagnose and rectify faults in display circuits | Part - Refer Note 1 (below). |
| UEENEEH077B | Diagnose and rectify faults in recording and replay apparatus | UEENEEH077A | Diagnose and rectify faults in recording and replay apparatus | Part - Refer Note 1 (below). |
| UEENEEH078B | Diagnose and rectify faults in camera circuits | UEENEEH078A | Diagnose and rectify faults in camera circuits | Part - Refer Note 1 (below). |
| UEENEEH079B | Diagnose and rectify faults in digital television apparatus | UEENEEH079A | Diagnose and rectify faults in digital television apparatus | Part - Refer Note 1 (below). |
| UEENEEH080B | Diagnose and rectify faults in digital transmission systems | UEENEEH080A | Diagnose and rectify faults in digital transmission systems | Part - Refer Note 1 (below). |
| UEENEEH081B | Design printed circuit boards | UEENEEH081A | Design printed circuit boards | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH082B | Develop solutions to RF amplifiers problems | UEENEEH082A | Develop solutions to RF amplifiers problems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH083B | Analyse the performance of wireless-based electronic systems | UEENEEH083A | Analyse the performance of wireless-based electronic systems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH084B | Design DSP-based systems | UEENEEH084A | Design DSP-based systems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH085B | Design electronic data acquisition systems | UEENEEH085A | Design electronic data acquisition systems | Part - Refer Note 1 (below). Also, removal of all pre-requisites |
| UEENEEH086B | Commission microwave and satellite communication systems | UEENEEH086A | Commission microwave and satellite communication systems | Part - Refer Note 1 (below). |
| UEENEEH087B | Solve problems in musical equipment circuits | UEENEEH087A | Solve problems in musical equipment circuits | Part - Refer Note 1 (below). |
| UEENEEH088B | Design and develop electronics/computer systems project | UEENEEH088A | Design and develop electronics/computer systems project | Part - Refer Note 1 (below). |
| UEENEEI001B | Install and set up transducers and sensing devices | UEENEEI001A | Install and set up transducers and sensing devices | Part - Refer Note 1 (below). |
| UEENEEI002B | Solve problems in pressure measurement systems | UEENEEI002A | Solve problems in pressure measurement systems | Part - Refer Note 1 (below). |
| UEENEEI003B | Solve problems in density/level measurement systems | UEENEEI003A | Solve problems in density/level measurement systems | Part - Refer Note 1 (below). |
| UEENEEI004B | Solve problems in flow measurement systems | UEENEEI004A | Solve problems in flow measurement systems | Part - Refer Note 1 (below). |
| UEENEEI005B | Solve problems in temperature measurement systems | UEENEEI005A | Solve problems in temperature measurement systems | Part - Refer Note 1 (below). |
| UEENEEI006B | Solve problems in process controllers, transmitters and converters | UEENEEI006A | Solve problems in process controllers, transmitters and converters | Part - Refer Note 1 (below). |
| UEENEEI007B | Install process instrumentation and control cabling and tubing | UEENEEI007A | Install process instrumentation and control cabling and tubing | Part - Refer Note 1 (below). |
| UEENEEI008B | Install process control apparatus and associated equipment | UEENEEI008A | Install process control apparatus and associated equipment | Part - Refer Note 1 (below). |
| UEENEEI009B | Set up process measuring and control instruments | UEENEEI009A | Set up process measuring and control instruments | Part - Refer Note 1 (below). |
| UEENEEI010B | Set up and adjust process control loops | UEENEEI010A | Set up and adjust process control loops | Part - Refer Note 1 (below). |
| UEENEEI011B | Find and rectify faults in process control valve and associated equipment | UEENEEI011A | Find and rectify faults in process control valve and associated equipment | Part - Refer Note 1 (below). |
| UEENEEI012B | Verify compliance and functionality of process control installations | UEENEEI012A | Verify compliance and functionality of process control installations | Part - Refer Note 1 (below). |
| UEENEEI013B | Select equipment for process control systems | UEENEEI013A | Select equipment for process control systems | Part - Refer Note 1 (below). |
| UEENEEI014B | Find and rectify faults in process control systems | UEENEEI014A | Find and rectify faults in process control systems | Part - Refer Note 1 (below). |
| UEENEEI015B | Find and rectify faults in medical equipment control systems | UEENEEI015A | Find and rectify faults in medical equipment control systems | Part - Refer Note 1 (below). |
| UEENEEI016A | RESERVED | UEENEEI016A | RESERVED |  |
| UEENEEI017B | Calibrate and test measuring instruments | UEENEEI017A | Calibrate and test measuring instruments | Part - Refer Note 1 (below). |
| UEENEEI018A | RESERVED | UEENEEI018A | RESERVED | Part - Refer Note 1 (below). |
| UEENEEI019B | Set up field control devices | UEENEEI019A | Set up field control devices | Part - Refer Note 1 (below). |
| UEENEEI020B | Provide solutions to problems in basic industrial control systems | UEENEEI020A | Provide solutions to problems in basic industrial control systems | Part - Refer Note 1 (below). |
| UEENEEI021B | Find and repair faults in measuring and analysis systems | UEENEEI021A | Find and repair faults in measuring and analysis systems | Part - Refer Note 1 (below). |
| UEENEEI022B | Assist in commissioning process control systems | UEENEEI022A | Assist in commissioning process control systems | Part - Refer Note 1 (below). |
| UEENEEI023B | Design electronic control systems | UEENEEI023A | Design electronic control systems | Part - Refer Note 1 (below). |
| UEENEEI024A | RESERVED | UEENEEI024A | RESERVED |  |
| UEENEEI025B | Provide solutions to fluid circuit operations | UEENEEI025A | Provide solutions to fluid circuit operations | Part - Refer Note 1 (below). |
| UEENEEI026B | Provide solutions to pneumatic/hydraulic system operations | UEENEEI026A | Provide solutions to pneumatic/hydraulic system operations | Part - Refer Note 1 (below). |
| UEENEEI027B | Analyse complex electronic circuits controlling fluids | UEENEEI027A | Analyse complex electronic circuits controlling fluids | Part - Refer Note 1 (below). |
| UEENEEI028B | Set up controls on complex fluid systems | UEENEEI028A | Set up controls on complex fluid systems | Part - Refer Note 1 (below). |
| UEENEEI029B | Set up electronically controlled mechanically operated complex systems | UEENEEI029A | Set up electronically controlled mechanically operated complex systems | Part - Refer Note 1 (below). |
| UEENEEI030B | Set up electronically controlled robotically operated complex systems | UEENEEI030A | Set up electronically controlled robotically operated complex systems | Part - Refer Note 1 (below). |
| UEENEEI031A | RESERVED | UEENEEI031A | RESERVED |  |
| UEENEEI032A | RESERVED | UEENEEI032A | RESERVED |  |
| UEENEEI033B | RESERVED | UEENEEI033A | RESERVED |  |
| UEENEEI034B | Manage control projects | UEENEEI033A | Manage control projects | Part - Refer Note 1 (below). |
| UEENEEI035B | Plan control projects | UEENEEI035A | Plan control projects | Part - Refer Note 1 (below). |
| UEENEEI036B | Manage automated systems projects | UEENEEI036A | Manage automated systems projects | Part - Refer Note 1 (below). |
| UEENEEI037B | Plan automated systems projects | UEENEEI037A | Plan automated systems projects | Part - Refer Note 1 (below). |
| UEENEEJ001A | RESERVED | UEENEEJ001A | RESERVED |  |
| UEENEEJ002B | Prepare refrigerant tubing and fittings | UEENEEJ002A | Prepare refrigerant tubing and fittings | Part - Refer Note 1 (below). |
| UEENEEJ003B | Determine the basic operating conditions of vapour compression systems | UEENEEJ003A | Determine the basic operating conditions of vapour compression systems | Part - Refer Note 1 (below). |
| UEENEEJ004B | Determine the basic operating conditions of air conditioning systems | UEENEEJ004A | Determine the basic operating conditions of air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ005B | Position, assemble and start up split air conditioning systems | UEENEEJ005A | Position, assemble and start up split air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ006B | Install pipe work for refrigeration and air conditioning systems | UEENEEJ006A | Install pipe work for refrigeration and air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ007B | Install refrigeration and air conditioning systems, major components and associated equipment | UEENEEJ007A | Install refrigeration and air conditioning systems, major components and associated equipment | Part - Refer Note 1 (below). |
| UEENEEJ008B | Recover, pressure and leak test, evacuate and charge refrigerants | UEENEEJ008A | Recover, pressure and leak test, evacuate and charge refrigerants | Part - Refer Note 1 (below). |
| UEENEEJ009B | Verify compliance and functionality of refrigeration and air conditioning installations | UEENEEJ009A | Verify compliance and functionality of refrigeration and air conditioning installations | Part - Refer Note 1 (below). |
| UEENEEJ010B | Select refrigerant pipe/tube, accessories and associated controls | UEENEEJ010A | Select refrigerant pipe/tube, accessories and associated controls | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEJ012B | Diagnose and rectify faults in complex refrigeration/air conditioning systems | UEENEEJ012A | Diagnose and rectify faults in complex refrigeration/air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ013B | Commission refrigeration and air conditioning systems | UEENEEJ013A | Commission refrigeration and air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ014B | Solve problems in hydronic systems | UEENEEJ014A | Solve problems in hydronic systems | Part - Refer Note 1 (below). |
| UEENEEJ015B | Solve problems in beverage dispensers | UEENEEJ015A | Solve problems in beverage dispensers | Part - Refer Note 1 (below). |
| UEENEEJ016B | Solve problems in transport refrigeration systems | UEENEEJ016A | Solve problems in transport refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ017B | Solve problems in ultra-low temperature refrigeration systems | UEENEEJ017A | Solve problems in ultra-low temperature refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ018B | Solve problems in post mix refrigeration systems | UEENEEJ018A | Solve problems in post mix refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ019B | Solve problems in ice making systems | UEENEEJ019A | Solve problems in ice making systems | Part - Refer Note 1 (below). |
| UEENEEJ020B | Solve problems in industrial refrigeration systems | UEENEEJ020A | Solve problems in industrial refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ021B | Monitor and adjust energy management systems on refrigeration systems | UEENEEJ021A | Monitor and adjust energy management systems on refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ022B | Diagnose faults in complex refrigeration or HVAC control systems | UEENEEJ022A | Diagnose faults in complex refrigeration or HVAC control systems | Part - Refer Note 1 (below). |
| UEENEEJ023B | Commission complex heating, ventilation and air conditioning (HVAC) systems | UEENEEJ023A | Commission complex heating, ventilation and air conditioning (HVAC) systems | Part - Refer Note 1 (below). |
| UEENEEJ024B | Commission hydronic systems for refrigeration and/or air conditioning | UEENEEJ024A | Commission hydronic systems for refrigeration and/or air conditioning | Part - Refer Note 1 (below). |
| UEENEEJ025B | Commission complex refrigeration systems | UEENEEJ025A | Commission complex refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ026B | Commission complex control systems for refrigeration/air conditioning systems | UEENEEJ026A | Commission complex control systems for refrigeration/air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ027B | Determine thermodynamic parameters of refrigeration and air conditioning systems | UEENEEJ027A | Determine thermodynamic parameters of refrigeration and air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ028B | Produce HVAC/R design drawings | UEENEEJ028A | Produce HVAC/R design drawings | Part - Refer Note 1 (below). |
| UEENEEJ029B | Determine the heat loads for commercial refrigeration and air conditioning applications | UEENEEJ029A | Determine the heat loads for commercial refrigeration and air conditioning applications | Part - Refer Note 1 (below). |
| UEENEEJ030B | Produce HVAC/R control system design diagrams | UEENEEJ030A | Produce HVAC/R control system design diagrams | Part - Refer Note 1 (below). |
| UEENEEJ031B | Provide solutions to vibration problems in HVAC/R system design | UEENEEJ031A | Provide solutions to vibration problems in HVAC/R system design | Part - Refer Note 1 (below). |
| UEENEEJ032B | Design commercial refrigeration systems | UEENEEJ032A | Design commercial refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ033B | Design industrial refrigeration systems | UEENEEJ033A | Design industrial refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ034B | Design heating, ventilation and air conditioning (HVAC) systems | UEENEEJ034A | Design heating, ventilation and air conditioning (HVAC) systems | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEJ036B | Evaluate and report on energy management | UEENEEJ036A | Evaluate and report on energy management | Part - Refer Note 1 (below). |
| UEENEEJ037B | Evaluate and report on air quality in buildings | UEENEEJ037A | Evaluate and report on air quality in buildings | Part - Refer Note 1 (below). |
| UEENEEJ038B | Analyse noise and vibration in refrigeration and air conditioning systems | UEENEEJ038A | Analyse noise and vibration in refrigeration and air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ039B | Develop specifications and prepare drawings for HVAC/R projects | UEENEEJ039A | Develop specifications and prepare drawings for HVAC/R projects | Part - Refer Note 1 (below). |
| UEENEEJ040B | Manage refrigeration and air conditioning projects | UEENEEJ040A | Manage refrigeration and air conditioning projects | Part - Refer Note 1 (below). |
| UEENEEJ041B | Design complex commercial refrigeration systems | UEENEEJ041A | Design complex commercial refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ042B | Design complex industrial refrigeration systems | UEENEEJ042A | Design complex industrial refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ043B | Design complex air conditioning systems | UEENEEJ043A | Design complex air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ044B | Design mechanical ventilation/exhaust systems | UEENEEJ044A | Design mechanical ventilation/exhaust systems | Part - Refer Note 1 (below). |
| UEENEEJ045B | Design hydronic systems | UEENEEJ045A | Design hydronic systems | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEJ047B | Audit energy use for commercial HVAC/R systems | UEENEEJ047A | Audit energy use for commercial HVAC/R systems | Part - Refer Note 1 (below). |
| UEENEEJ048B | Analyse HVAC control systems for compliance with standards and regulations | UEENEEJ048A | Analyse HVAC control systems for compliance with standards and regulations | Part - Refer Note 1 (below). |
| UEENEEJ049B | Develop specifications for heat exchanger designs | UEENEEJ049A | Develop specifications for heat exchanger designs | Part - Refer Note 1 (below). |
| UEENEEJ050B | Evaluate alternative and new technologies applicable to electrotechnology applications | UEENEEJ050A | Evaluate alternative and new technologies applicable to electrotechnology applications | Part - Refer Note 1 (below). |
| UEENEEJ051B | Service small appliances and power tools | UEENEEJ051A | Service small appliances and power tools | Part - Refer Note 1 (below). |
| UEENEEJ052B | Carry out repairs to appliance refrigeration systems | UEENEEJ052A | Carry out repairs to appliance refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ053B | Find and rectify faults in appliance motors and associated controls | UEENEEJ053A | Find and rectify faults in appliance motors and associated controls | Part - Refer Note 1 (below). |
| UEENEEJ054B | Find and rectify faults in appliance control devices and systems | UEENEEJ054A | Find and rectify faults in appliance control devices and systems | Part - Refer Note 1 (below). Also, removal of pre-requisite UEENEEJ009B |
| UEENEEJ055B | Service refrigerated appliances | UEENEEJ055A | Service refrigerated appliances | Part - Refer Note 1 (below). |
| UEENEEJ056B | Service clothes washers and dryers | UEENEEJ056A | Service clothes washers and dryers | Part - Refer Note 1 (below). |
| UEENEEJ057B | Service electric heating appliances | UEENEEJ057A | Service electric heating appliances | Part - Refer Note 1 (below). |
| UEENEEJ058B | Service dish washing machines | UEENEEJ058A | Service dish washing machines | Part - Refer Note 1 (below). |
| UEENEEJ059B | Service gas appliances | UEENEEJ059A | Service gas appliances | Part - Refer Note 1 (below). |
| UEENEEJ060B | Service room air conditioners | UEENEEJ060A | Service room air conditioners | Part - Refer Note 1 (below). |
| UEENEEJ061B | Verify compliance and functionality of appliances | UEENEEJ061A | Verify compliance and functionality of appliances | Part - Refer Note 1 (below). |
| UEENEEJ062B | Recover, pressure and leak test, evacuate and charge refrigerants/appliances | UEENEEJ062A | Recover, pressure and leak test, evacuate and charge refrigerants/appliances | Part - Refer Note 1 (below). |
| UEENEEJ063B | Analyse the psychrometric and thermodynamic performance of HVAC/R systems | UEENEEJ063A | Analyse the psychrometric and thermodynamic performance of HVAC/R systems | Part - Refer Note 1 (below). |
| UEENEEJ064B | Analyse the operation of HVAC/R systems | UEENEEJ064A | Analyse the operation of HVAC/R systems | Part - Refer Note 1 (below). |
| UEENEEJ065B | Evaluate fluid and thermodynamic parameters of refrigeration systems | UEENEEJ065A | Evaluate fluid and thermodynamic parameters of refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ066B | Solve problems in diary refrigeration systems | UEENEEJ066A | Solve problems in diary refrigeration systems | Part - Refer Note 1 (below). |
| UEENEEJ067B | Solve problems in central plant air conditioning systems | UEENEEJ067A | Solve problems in central plant air conditioning systems | Part - Refer Note 1 (below). |
| UEENEEJ068B | Maintain microbial control of air and water systems | UEENEEJ068A | Maintain microbial control of air and water systems | Part - Refer Note 1 (below). |
| UEENEEJ069B | Plan refrigeration and air conditioning projects | UEENEEJ069A | Plan refrigeration and air conditioning projects | Part - Refer Note 1 (below). |
| UEENEEJ070B | Diagnose and rectify faults in refrigeration and air conditioning control systems | UEENEEJ070A | Diagnose and rectify faults in refrigeration and air conditioning control systems | Part - Refer Note 1 (below). |
| UEENEEJ071B | Solve problems in refrigerated beverage vending cabinets | UEENEEJ071A | Solve problems in refrigerated beverage vending cabinets | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEJ073B | Service microwave ovens | UEENEEJ073A | Service microwave ovens | Part - Refer Note 1 (below). |
| UEENEEK001B | Maintain safety and tidiness of remote area power supply (RAPS) systems | UEENEEK001A | Maintain safety and tidiness of remote area power supply (RAPS) systems | Part - Refer Note 1 (below). |
| UEENEEK002B | Work safely with remote area power supply (RAPS) systems | UEENEEK002A | Work safely with remote area power supply (RAPS) systems | Part - Refer Note 1 (below). |
| UEENEEK003B | Conduct periodic maintenance of remote area power supply (RAPS) battery banks | UEENEEK003A | Conduct periodic maintenance of remote area power supply (RAPS) battery banks | Part - Refer Note 1 (below). |
| UEENEEK004B | Conduct periodic maintenance of remote area power supply (RAPS) generator sets | UEENEEK004A | Conduct periodic maintenance of remote area power supply (RAPS) generator sets | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEK006B | Conduct periodic maintenance of remote area power supply (RAPS) wind generators | UEENEEK006A | Conduct periodic maintenance of remote area power supply (RAPS) wind generators | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEK008B | Plan periodic maintenance schedules of remote area power supplies | UEENEEK008A | Plan periodic maintenance schedules of remote area power supplies | Part - Refer Note 1 (below). |
| UEENEEK009B | Attend to breakdowns in remote area power supplies | UEENEEK009A | Attend to breakdowns in remote area power supplies | Part - Refer Note 1 (below). |
| UEENEEK010B | Coordinate maintenance of renewable energy apparatus and systems | UEENEEK010A | Coordinate maintenance of renewable energy apparatus and systems | Part - Refer Note 1 (below). |
| UEENEEK011B | Assemble and connect remote area power supplies (RAPS) | UEENEEK011A | Assemble and connect remote area power supplies (RAPS) | Part - Refer Note 1 (below). |
| UEENEEK012B | Provide basic sustainable energy solutions for energy reduction in domestic premises | UEENEEK012A | Provide basic sustainable energy solutions for energy reduction in domestic premises | Part - Refer Note 1 (below). |
| UEENEEK013B | Apply sustainable energy practice in daily activities | UEENEEK013A | Apply sustainable energy practice in daily activities | Part - Refer Note 1 (below). |
| UEENEEK014B | Promote sustainable energy practice in the community | UEENEEK014A | Promote sustainable energy practice in the community | Part - Refer Note 1 (below). |
| UEENEEK015A | RESERVED | UEENEEK015A | RESERVED | Part - Refer Note 1 (below). |
| UEENEEK016A | RESERVED | UEENEEK016A | RESERVED | Part - Refer Note 1 (below). |
| UEENEEK017B | Maintain and repair facilities associated with remote area essential services operation | UEENEEK017A | Maintain and repair facilities associated with remote area essential services operation | Part - Refer Note 1 (below). |
| UEENEEK018B | Maintain operation of remote area water facilities | UEENEEK018A | Maintain operation of remote area water facilities | Part - Refer Note 1 (below). |
| UEENEEK019B | Maintain operation of remote area waste water facilities | UEENEEK019A | Maintain operation of remote area waste water facilities | Part - Refer Note 1 (below). |
| UEENEEK020B | Maintain operation of remote area power plant | UEENEEK020A | Maintain operation of remote area power plant | Part - Refer Note 1 (below). |
| UEENEEK021B | Manage renewable energy projects | UEENEEK021A | Manage renewable energy projects | Part - Refer Note 1 (below). |
| UEENEEK022B | Plan renewable energy projects | UEENEEK022A | Plan renewable energy projects | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEK024B | Assemble and set up photovoltaic apparatus in domestic dwellings | UEENEEK024A | Assemble and set up photovoltaic apparatus in domestic dwellings | Part - Refer Note 1 (below). |
| UEENEEK025B | Solve basic problems in photovoltaic energy apparatus | UEENEEK025A | Solve basic problems in photovoltaic energy apparatus | Part - Refer Note 1 (below). |
| UEENEEK026B | Install and set up grid connected photovoltaic power systems | UEENEEK026A | Install and set up grid connected photovoltaic power systems | Part - Refer Note 1 (below). |
| UEENEEK027B | Diagnose faults in renewable energy control systems | UEENEEK027A | Diagnose faults in renewable energy control systems | Part - Refer Note 1 (below). |
| UEENEEK028B | Solve problems in stand-alone renewable energy systems | UEENEEK028A | Solve problems in stand-alone renewable energy systems | Part - Refer Note 1 (below). |
| UEENEEK029B | Design renewable energy heating systems | UEENEEK029A | Design renewable energy heating systems | Part - Refer Note 1 (below). |
| UEENEEK030B | Solve problems in wind energy conversion systems | UEENEEK030A | Solve problems in wind energy conversion systems | Part - Refer Note 1 (below). |
| UEENEEK031B | Design wind energy conversion systems rated to 10kW | UEENEEK031A | Design wind energy conversion systems rated to 10kW | Part - Refer Note 1 (below). |
| UEENEEK032B | Develop strategies to address sustainability issues | UEENEEK032A | Develop strategies to address sustainability issues | Part - Refer Note 1 (below). |
| UEENEEK033B | Design hybrid power systems | UEENEEK033A | Design hybrid power systems | Part - Refer Note 1 (below). |
| UEENEEK034B | Install stand-alone photovoltaic power systems | UEENEEK034A | Install stand-alone photovoltaic power systems | Part – Refer Note 1 (below). |
| UEENEEK035B | Design grid connected power supply systems | UEENEEK035A | Design grid connected power supply systems | Part - Refer Note 1 (below). |
| UEENEEK036A | Prepare grid connected photovoltaic power systems for LV connection | UEENEEK036A | Prepare grid connected photovoltaic power systems for LV connection | Part – Refer Note 1 (below). |
| UEENEEK037B | Install and set up micro-hydro systems | UEENEEK037A | Install and set up micro-hydro systems | Part - Refer Note 1 (below). |
| UEENEEK038B | Design micro-hydro systems | UEENEEK038A | Design micro-hydro systems | Part - Refer Note 1 (below). |
| UEENEEK039B | Design stand-alone renewable energy systems | UEENEEK039A | Design stand-alone renewable energy systems | Part - Refer Note 1 (below). |
| UEENEEK040B | Develop engineering solutions to renewable energy problems | UEENEEK040A | Develop engineering solutions to renewable energy problems | Part - Refer Note 1 (below). |
| UEENEEK041B | Develop strategies for effective energy reduction in buildings | UEENEEK041A | Develop strategies for effective energy reduction in buildings | Part - Refer Note 1 (below). |
| UEENEEK042A | Participate in environmentally sustainable work practices | NEW |  |  |
| UEENEEK043A | Install small wind energy conversion systems for stand-alone applications | NEW |  |  |
| UEENEEK044A | RESERVED | UEENEEK044A | RESERVED | Part - Refer Note 1 (below). |
| UEENEEK045A | Implement & monitor policies & procedures for environmentally sustainable electrotech work practice | NEW |  |  |
| UEENEEK046A | Design energy management controls for electrical installations in buildings | NEW |  |  |
| UEENEEM001B | Report on the integrity of explosion-protected equipment in hazardous areas | UEENEEM001A | Report on the integrity of explosion-protected equipment in hazardous areas | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM002B | Attend to breakdowns in hazardous areas | UEENEEM002A | Attend to breakdowns in hazardous areas | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM003B | Use and maintain the integrity of portable gas detection devices | UEENEEM003A | Use and maintain the integrity of portable gas detection devices | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM004B | Install explosion-protected equipment and wiring systems | UEENEEM004A | Install explosion-protected equipment and wiring systems | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM005B | Install and maintain integrity of fixed gas detection equipment | UEENEEM005A | Install and maintain integrity of fixed gas detection equipment | Part - Refer Note 1 (below). |
| UEENEEM006B | Maintain equipment in hazardous areas | UEENEEM006A | Maintain equipment in hazardous areas | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM007B | Overhaul and repair explosion-protected equipment | UEENEEM007A | Overhaul and repair explosion-protected equipment | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM008B | Assess explosion-protected equipment for compliance with standards | UEENEEM008A | Assess explosion-protected equipment for compliance with standards | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM009B | Test installations in hazardous areas | UEENEEM009A | Test installations in hazardous areas | Part - Refer Note 1. |
| UEENEEM010B | Conduct close inspection of existing hazardous areas installations | UEENEEM010A | Conduct close inspection of existing hazardous areas installations | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM011B | Conduct detailed inspection of hazardous areas installations | UEENEEM011A | Conduct detailed inspection of hazardous areas installations | Part - Refer Note 1 (below). |
| UEENEEM012B | Develop and manage maintenance programs for hazardous areas electrical equipment | UEENEEM012A | Develop and manage maintenance programs for hazardous areas electrical equipment | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM013B | Ensure the safety of hazardous areas | UEENEEM013A | Ensure the safety of hazardous areas | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM014B | Design and develop modifications to explosion-protected equipment | UEENEEM014A | Design and develop modifications to explosion-protected equipment | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM015B | Classify hazardous areas | UEENEEM015A | Classify hazardous areas | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM016B | Design electrical installations in hazardous areas | UEENEEM016A | Design electrical installations in hazardous areas | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM017B | Design explosion-protected electrical systems | UEENEEM017A | Design explosion-protected electrical systems | Part - Refer Note 1 (below). Also, amendment of pre-requisite statement |
| UEENEEM018B | Design gas detection systems | UEENEEM018A | Design gas detection systems | Part - Refer Note 1 (below). |
| UEENEEN001B | Service mechanical signalling equipment and infrastructure | UEENEEN001A | Service mechanical signalling equipment and infrastructure | Part - Refer Note 1 (below). |
| UEENEEN002B | Assemble and wire internal electrical signalling equipment | UEENEEN002A | Assemble and wire internal electrical signalling equipment | Part - Refer Note 1 (below). |
| UEENEEN003B | Install and maintain track circuit leads and bonds | UEENEEN003A | Install and maintain track circuit leads and bonds | Part - Refer Note 1 (below). |
| UEENEEN004B | Perform cable tests | UEENEEN004A | Perform cable tests | Part - Refer Note 1 (below). |
| UEENEEN005B | Install and maintain signalling power supplies | UEENEEN005A | Install and maintain signalling power supplies | Part - Refer Note 1 (below). |
| UEENEEN006B | Maintain remote control and non-vital interlocking control systems | UEENEEN006A | Maintain remote control and non-vital interlocking control systems | Part - Refer Note 1 (below). |
| UEENEEN007B | Maintain power signalling and protected level crossing equipment | UEENEEN007A | Maintain power signalling and protected level crossing equipment | Part - Refer Note 1 (below). |
| UEENEEN008B | Maintain on-site power operated point-activating devices | UEENEEN008A | Maintain on-site power operated point-activating devices | Part - Refer Note 1 (below). |
| UEENEEN009B | Maintain track circuits equipment | UEENEEN009A | Maintain track circuits equipment | Part - Refer Note 1 (below). |
| UEENEEN010B | Maintain electronic signalling and communication equipment | UEENEEN010A | Maintain electronic signalling and communication equipment | Part - Refer Note 1 (below). |
| UEENEEN011B | Install and maintain power operated signalling equipment | UEENEEN011A | Install and maintain power operated signalling equipment | Part - Refer Note 1 (below). |
| UEENEEN012B | Maintain power signalling and protective relay interlocking systems | UEENEEN012A | Maintain power signalling and protective relay interlocking systems | Part - Refer Note 1 (below). |
| UEENEEN013B | Install and test computer based interlocking equipment | UEENEEN013A | Install and test computer based interlocking equipment | Part - Refer Note 1 (below). |
| UEENEEN014B | Maintain computer based and solid state interlocking equipment | UEENEEN014A | Maintain computer based and solid state interlocking equipment | Part - Refer Note 1 (below). |
| UEENEEN015B | Conduct routine inspecting and testing of new signal cables and lines | UEENEEN015A | Conduct routine inspecting and testing of new signal cables and lines | Part - Refer Note 1 (below). |
| UEENEEN016B | Maintain electronic switched and microprocessor-based remote control systems | UEENEEN016A | Maintain electronic switched and microprocessor-based remote control systems | Part - Refer Note 1 (below). |
| UEENEEN017B | Install and maintain transmission interface equipment | UEENEEN017A | Install and maintain transmission interface equipment | Part - Refer Note 1 (below). |
| UEENEEN018B | Find and repair cable system faults | UEENEEN018A | Find and repair cable system faults | Part - Refer Note 1 (below). |
| UEENEEN019B | Test equipment and isolate faults | UEENEEN019A | Test equipment and isolate faults | Part - Refer Note 1 (below). |
| UEENEEN020B | Install electrical power and control equipment for rail networks | UEENEEN020A | Install electrical power and control equipment for rail networks | Part - Refer Note 1 (below). |
| 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 | Part - Refer Note 1 (below). |
| UEENEEN026B | Develop rail signalling maintenance programmes | UEENEEN026A | Develop rail signalling maintenance programmes | Part - Refer Note 1 (below). |
| UEENEEN027B | Decommission electrical and electro-mechanical signalling from service | UEENEEN027A | Decommission electrical and electro-mechanical signalling from service | Part - Refer Note 1 (below). |
| UEENEEN028B | Test and commission power signalling equipment | UEENEEN028A | Test and commission power signalling equipment | Part - Refer Note 1 (below). |
| UEENEEP001B | Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply | UEENEEP001A | Disconnect and reconnect fixed wired electrical equipment connected to a low voltage supply | Part - Refer Note 1 (below). Also, amendment of EKAS alignments |
| UEENEEP002B | Attach cords and plugs to electrical equipment for connection to a single phase 250 volt supply | UEENEEP002A | Attach cords and plugs to electrical equipment for connection to a single phase 250 volt supply | Part - Refer Note 1 (below). |
| UEENEEP003B | Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply | UEENEEP003A | Attach cords and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply | Part - Refer Note 1 (below). |
| UEENEEP004B | Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply | UEENEEP004A | Disconnect and reconnect explosion-protected electrical equipment connected to low voltage supply | Part - Refer Note 1 (below). |
| UEENEEP005B | Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles | UEENEEP005A | Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles | Part - Refer Note 1 (below). |
| UEENEEP006B | Attach flexible cables and plugs to electrical equipment connected to a high voltage supply | UEENEEP006A | Attach flexible cables and plugs to electrical equipment connected to a high voltage supply | Part - Refer Note 1 (below). |
| UEENEEP007B | Locate and rectify faults in electrical low voltage equipment following prescribed procedures | UEENEEP007A | Locate and rectify faults in electrical low voltage equipment following prescribed procedures | Part - Refer Note 1 (below). |
| UEENEEP008B | Conduct in-service safety testing of electrical cord assemblies and cord connected equipment | UEENEEP008A | Conduct in-service safety testing of electrical cord assemblies and cord connected equipment | Part - Refer Note 1 (below). |
| UEENEEP009B | Locate and rectify faults in electrical low voltage appliances up to 250V following prescribed procedures | UEENEEP009A | Locate and rectify faults in electrical low voltage appliances up to 250V following prescribed procedures | Part - Refer Note 1 (below). |
| UEENEER001B | Contribute to the planning of a research project | UEENEER001A | Contribute to the planning of a research project | Part - Refer Note 1 (below). |
| UEENEER002B | Contribute to the conduct of a research project | UEENEER002A | Contribute to the conduct of a research project | Part - Refer Note 1 (below). |
| UEENEER003B | Contribute to the development of a product/application/service | UEENEER003A | Contribute to the development of a product/application/service | Part - Refer Note 1 (below). |
| UEENEER004B | Contribute to the trial of a product/application/service | UEENEER004A | Contribute to the trial of a product/application/service | Part - Refer Note 1 (below). |
| UEENEER005B | Contribute to intellectual property management | UEENEER005A | Contribute to intellectual property management | Part - Refer Note 1 (below). |
| UEENEER006B | Contribute to the commercialisation of a product/application/service | UEENEER006A | Contribute to the commercialisation of a product/application/service | Part - Refer Note 1 (below). |

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 and Standards for NVR Registered Training Organisations 2012. 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/NVR 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 or Standards for NVR Registered Training Organisations 2012

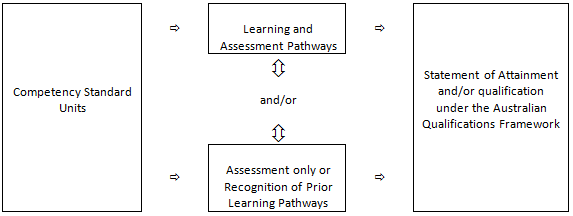
1.3.03 Pathways

# 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.

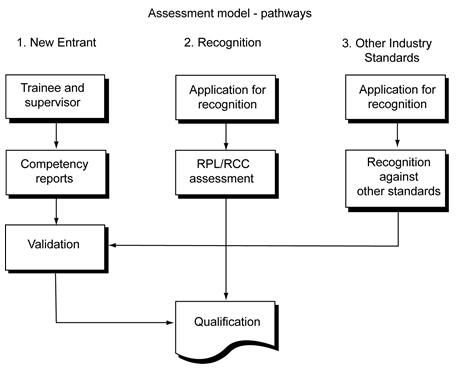
Assessment, by any pathway, must comply with the assessment requirements set out in the Assessment Guidelines of the Training Package and the AQTF or NVR.

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.

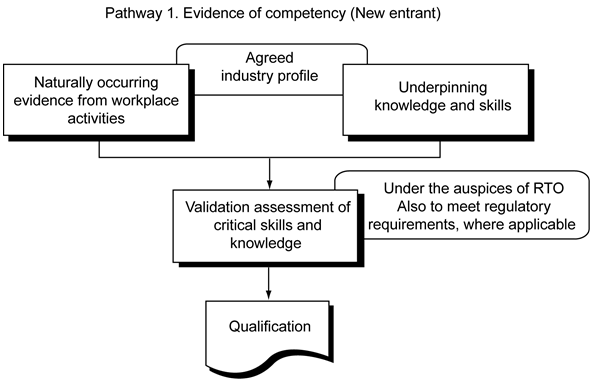
## Pathway 1: New Entrant Competency Development

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 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.

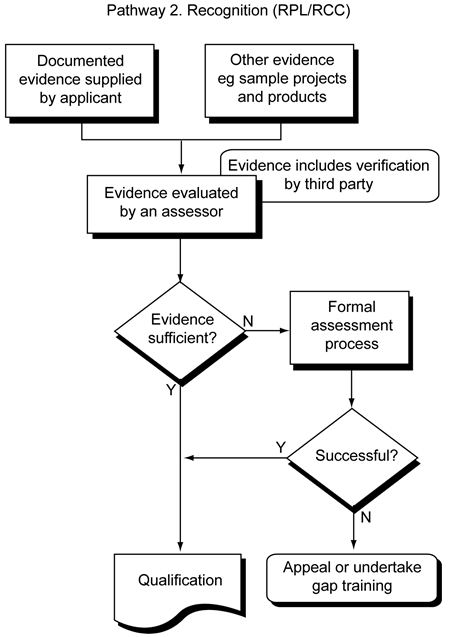
An existing national mechanism for recognition as a tradesperson exists under the Tradesmen’s’ Rights Regulation Act, which is administered by Trades Recognition Australia (TRA) – part of the Commonwealth Department of Industrial Relations. TRA grants recognition for the purposes of migration but further 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.

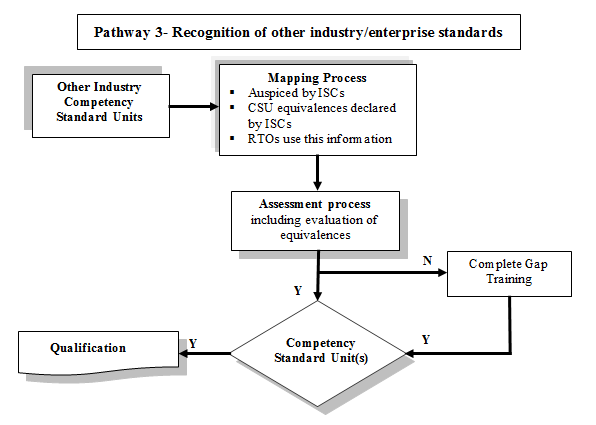


## Pathway 3: Recognition of Other Industry/Enterprise Standards

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 E-Oz Energy Skills Australia.

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 or NVR 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 or NVR 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 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'.

1.3.04 Assessment Principles within the Electrotechnology Industry

# 3.4 Assessment Principles within the Electrotechnology Industry

## Assessment Judgements

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 perquisite 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:

1. assessment against the units of competency must cover the broad range of skills and knowledge that are essential to competent performance
2. assessment of knowledge and skills must be integrated with their practical application
3. 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, E-Oz Energy Skills Australia, has developed an Industry Simulation Policy. This can be accessed from the E-Oz Energy Skills Australia website at: www.e-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 or NVR as expressed in the AQTF 2010 Essential Standards for Registration or Standards for NVR Registered Training Organisations 2012.

The AQTF 2010 Essential Standards for Initial and Continuing Registration can be downloaded from <www.training.com.au>.

The Standards for NVR Registered Training Organisations 2012 can be downloaded from <http://www.comlaw.gov.au/Details/F2013L00167>

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 or the Standards for NVR Registered Training Organisations 2012. 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 or Standards for NVR Registered Training Organisations 2012.

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 or Standards for NVR Registered Training Organisations 2012.

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. or Standards for NVR Registered Training Organisations 2012

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 or Standards for NVR Registered Training Organisations 2012.

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 or Standards for NVR Registered Training Organisations 2012, RTOs may contact the E-Oz Energy Skills Australia 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 or Standards for NVR Registered Training Organisations 2012.

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 or Standards for NVR Registered Training Organisations 2012

Recording Assessment Outcomes

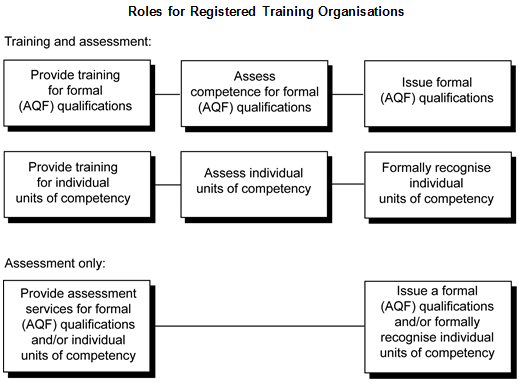
Each RTO must manage records to ensure their accuracy and integrity. See the AQTF 2010 Essential Standards for Initial and Continuing Registration or Standards for NVR Registered Training Organisations 2012.

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 or Standards for NVR Registered Training Organisations 2012, 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.



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 Parliamentary Documents | www.legislation.vic.gov.au |
| 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 or NVR 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.

1.3.05 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 or Standards for NVR Registered Training Organisations 2012 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 or Standards for NVR Registered Training Organisations 2012), 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 or NVR, 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 and NVR specifies mandatory competency requirements for assessors. For information, Element 1.4 from the AQTF 2007 Essential Standards for Registration and 4.4, 15.4 Standards for NVR Registered Training Organisations 2012 follows:

|  |
| --- |
| Training and assessment are conducted by trainers and assessors who:   1. have the necessary training and assessment competencies as determined by the National Quality Council or its successors, and 2. have the relevant vocational competencies at least to the level being delivered or assessed, and 3. can demonstrate current industry skills directly relevant to the training/assessment being undertaken, and 4. continue to develop their Vocational Education and Training (VET) knowledge and skills as well as their industry currency and trainer/assessor competence. |

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 or Standards for NVR Registered Training Organisations 2012 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 and NVR 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:

1. have the necessary training and assessment competencies as determined by the National Quality Council or its successors
2. have the relevant vocational competencies at least to the level being delivered or assessed and
3. can demonstrate current industry skills directly relevant to the training/assessment being undertaken, and
4. 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 (TAE40110) 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 (TAE10):  (a) TAEASS401B - Plan assessment activities and processes  (b) TAEASS402B - Assess competence  (c) TAEASS403B - 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 or Standards for NVR Registered Training Organisations 2012
* 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 E-Oz Energy Skills Australia. Visit the website: (www.e-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 training.gov.au or E-Oz Energy Skills Australia (www.e-oz.com.au). Materials on the list have been noted by the National Skills Standards Council (NSSC), 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 or NVR; and
* meet the assessment requirements expressed in the AQTF 2010 Essential Standards for Initial and Continuing Registration or Standards for NVR Registered Training Organisations 2012.

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.e-oz.com.

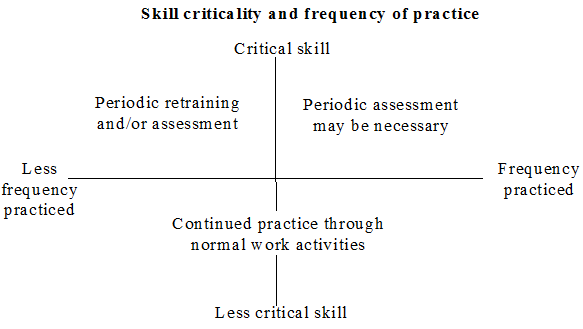
Portfolios. These are used for assessing skills achieved in the past. They can include work samples.

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 | Time constraints | Repeat assessments possible |
| --- | --- | --- | --- | --- | --- |
| Written objective tests | True/false  Multiple choice  Matching  Completion | Confirming essential factual knowledge, principles  Assessing deduction, transfer of knowledge  Complementing other methods | Controlled classroom  High level supervision  Large numbers | Moderate | Many |
| Written responses, short and extended answers | Calculations  Definitions, explanations  Essays | Assessing use of information  Application of knowledge  General ideas and solutions  Research, organization and expression of concepts or ideas | Test condition as above  or  Minimal supervision, and assistance | Moderate | Many |
| Oral test/ technical interview | Set question  Scenarios | Assessing depth and breadth of knowledge  Application of knowledge Relative to experience | Interview condition  One to one | Moderate | Many |
| On job or workplace assessment | Observation, checklist  Product assessment  Questioning to complement observations | Identifying mastery or competence of practical task, technical skill or interpersonal skill in real or simulated setting  Identifying gaps in education and training | Normal working conditions  Moderate level supervision  One to one  Avoid expensive or hazardous situations | High | Nil to many depending on assessment of product or process |
| 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 | Low | Several |
| Practical projects | Research task or investigation  Product or process development  Individual learning contract | Assessing integration and application of a number of work related skills to solve a given problem  Assessing individual approaches, innovation, creativity  Assessing interaction with others | Access to laboratory, workshop or workplace  Little supervision | Low | Several |
| Assignments | Resource life  Case studied  Poster presentation  Reports of video or speaker presentations  Reports of laboratory/field work, excursions  Individual learning contracts  Writing simple manuals or procedures | Confirming competence to research, analyse and synthesise information  Assessment of application of knowledge, skills and attitudes where practical testing is not feasible  Assessment of communication skills | Moderate of level control  Non-test conditions  Little supervision | Low | Several |
| Personal appraisal | Checklists or criteria which enable peer or self assessment | Establishing readiness for summative assessments  Assessment of an individual’s performance within a team effort | Non-test conditions  Little supervision  Small numbers | Low | Many |
| Verbal assessment | Oral exposition or lecture  Seminar, presentation and group discussion  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 | Low | Several |
| 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. | 2Real work conditions under workplace supervision.  Off-job assessment events  Any number | Low / Medium | On going |

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 or Standards for NVR Registered Training Organisations 2012.

For information, the mandatory assessment requirements from Standard 1 from the AQTF 2010 Essential Standards for Initial and Continuing Registration, or 15.5 of the Standards for NVR Registered Training Organisations 2012 are as follows:

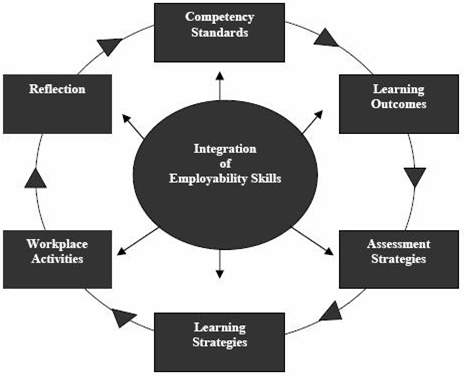
|  |  |  |
| --- | --- | --- |
| "1.5 |  | Assessment, including Recognition of Prior Learning(RPL): |
|  |  | a) meets the requirements of the relevant Training Package or accredited course, |
|  |  | b) is conducted in accordance with the principles of assessment and the rules of evidence, and |
|  |  | 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 E-Oz website at www.e-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.

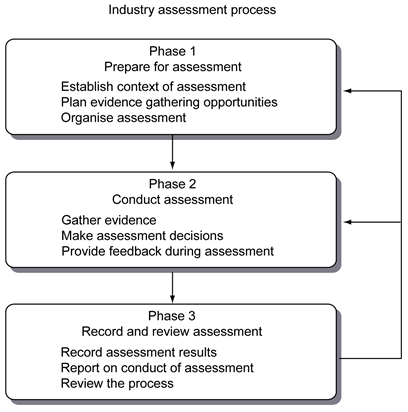
The Standards for Package Guidelines provides more information on reasonable adjustment, including examples of adjustments. Go to http://www.nssc.natese.gov.au/training\_packages

## 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

E-Oz Energy Skills Australia 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

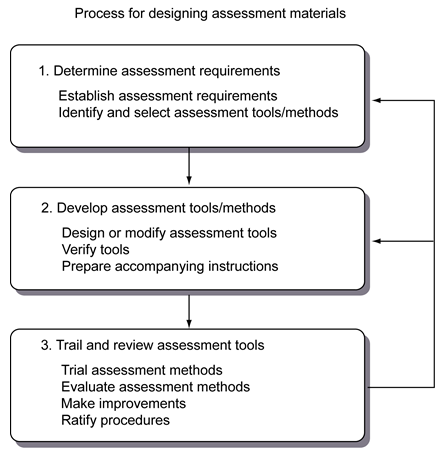
Assessment materials are developed, designed and implemented by appropriately authorised and competent assessors. The materials may range from relatively straight forward questions/answers and task tests to quite elaborate simulations for assessing concepts and values. Assessment materials should facilitate 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.



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:

a) Is the data gathering process sufficient, timely, valid and reliable to ensure the decision about competence relates to the overall requirements of the unit?

b) Do you always need to assess real work?

c) How is the critical evidence specified?

d) How many assessment tasks are required to collect the critical evidence of competency?

e) Which assessment tasks will provide a broad coverage of the Range Statement?

f) 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 E-Oz Energy Skills Australia 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 E-Oz Energy Skills Australia the DOI 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

E-OZ Energy Skills Australia

48 Mort St

Braddon ACT, 2602

PO Box 1202

Dickson, ACT, 2602

Ph: 02 6254 5180

Fax: 02 6257 4222

Email: office@e-oz.com.au

Web: www.e-oz.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

Standards for NVR Registered Training Organisations 2012: http://www.comlaw.gov.au/Details/F2013L00167

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.training.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.nssc.natese.gov.au/training\_packages

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.

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 DOI for more information on www.industry.gov.au

Australian National Training Authority, Facilitator Packs for Certificate IV in Training and Assessment or its replacement – contact DOifor more information on www.industry.gov.au

Australian National Training Authority, Facilitator's Pack for Train Small Groups and Assessment or its replacement – contact DOI for more information on www.industry.gov.au

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 Department of Industry for more information on www.industry.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 | E-Oz Energy Skills Australia  48 Mort St  Braddon ACT, 2602  PO Box 1202  Dickson, ACT, 2602  Ph: 02 6262 7055  Fax: 02 6257 4222  Email: office@e-oz.com.au  Web: www.e-oz.com.au |
| Western Australia ITC | WA IEU ITC Inc  P O Box 597  BALCATTA WA 6021  Tel: 08 9240 2688  Fax: 08 9240 2930  E-mail: 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 | E-Oz Energy Skills Australia  48 Mort St  Braddon ACT, 2602  PO Box 1202  Dickson, ACT, 2602  Ph: 02 6262 7055  Fax: 02 6257 4222  Email: office@e-oz.com.au  Web: www.e-oz.com.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 E-Oz Energy Skills Australia.

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 E-Oz Energy Skills Australia. This detail can be obtained directly from E-Oz Energy Skills Australia or found on the E-Oz Energy Skills Australia website at www.e-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

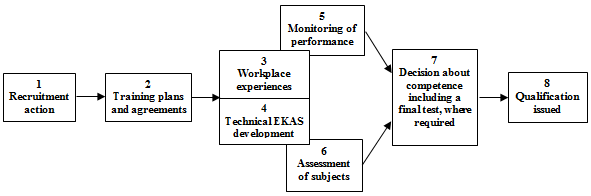
This section introduces competency development and/or recognition models based on combined on and off-the-job training and a model that allows individuals to have previous learning and work experience recognised.

#### 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 E-Oz Energy Skills Australia website at www.e-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

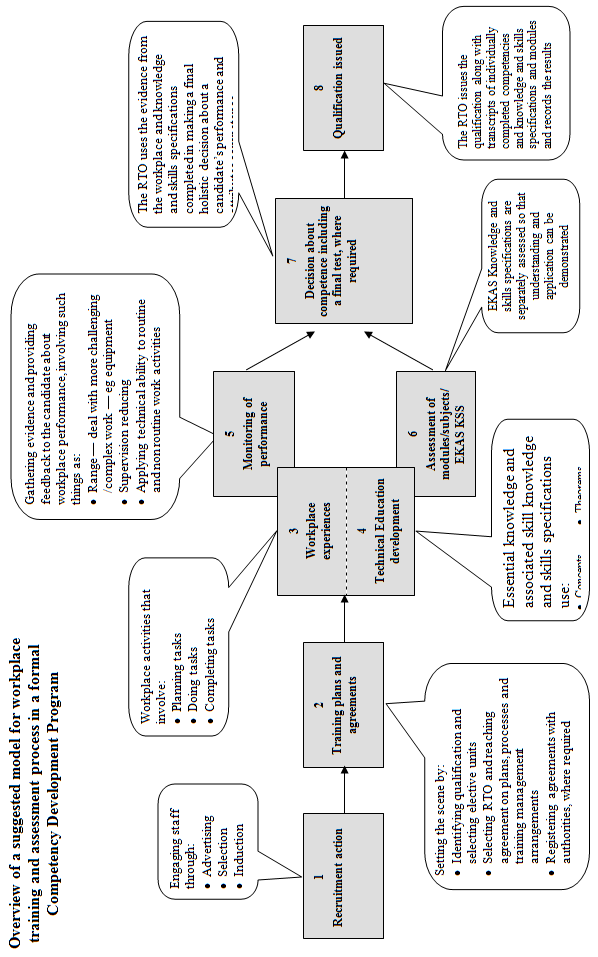
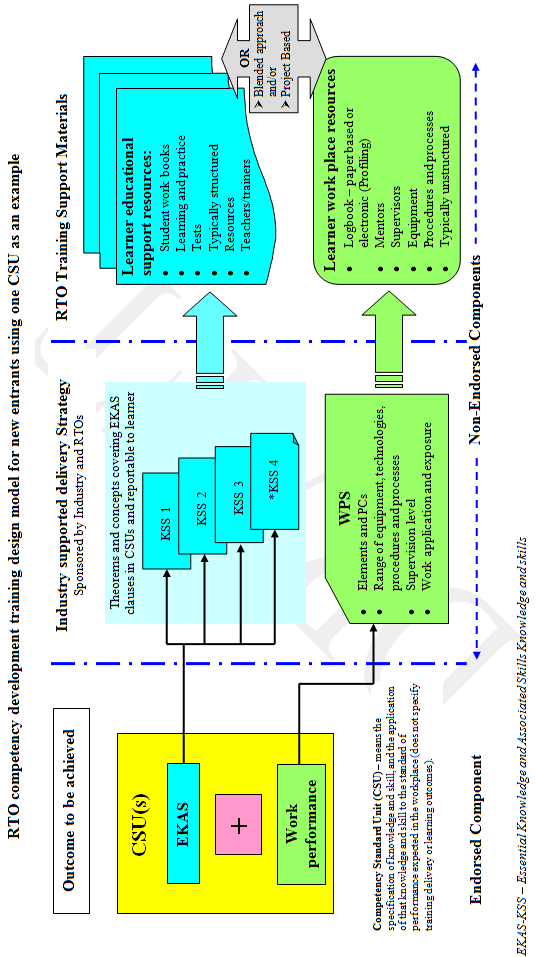
In designing training and assessment materials and resources to support new entrant competency development, consideration should be given to the preferred industry approach to learner development, in particular

* 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.

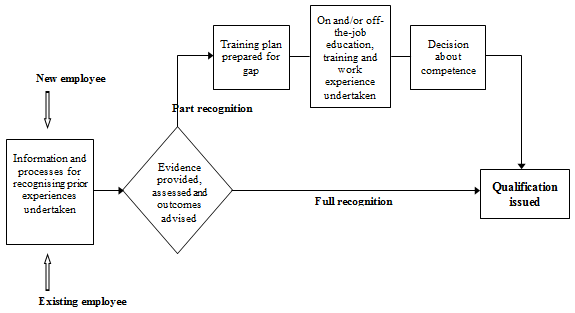
Using this approach an RTO can ensure increased consistency in

* 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.



#### 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

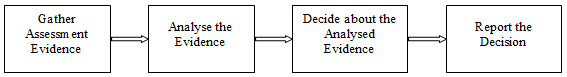
establishing suitable assessment methods

developing assessment tools appropriate to a specific assessment context

trialling 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

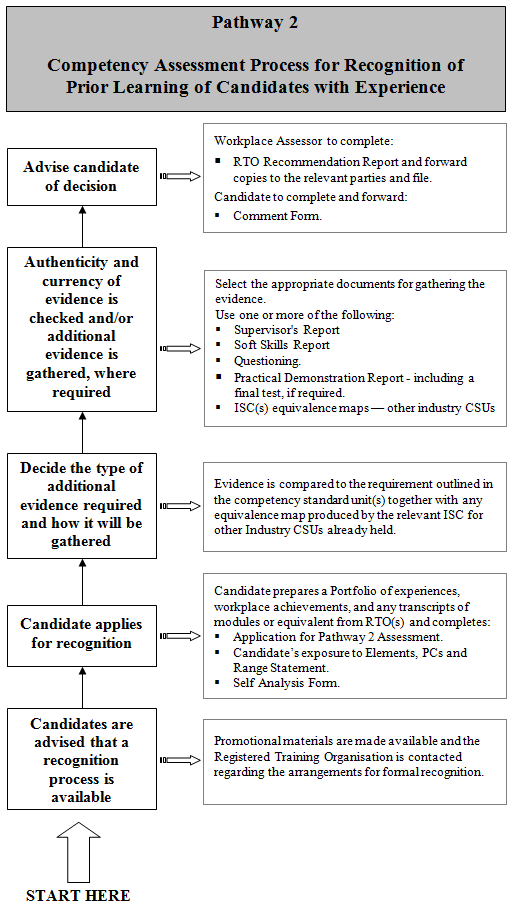
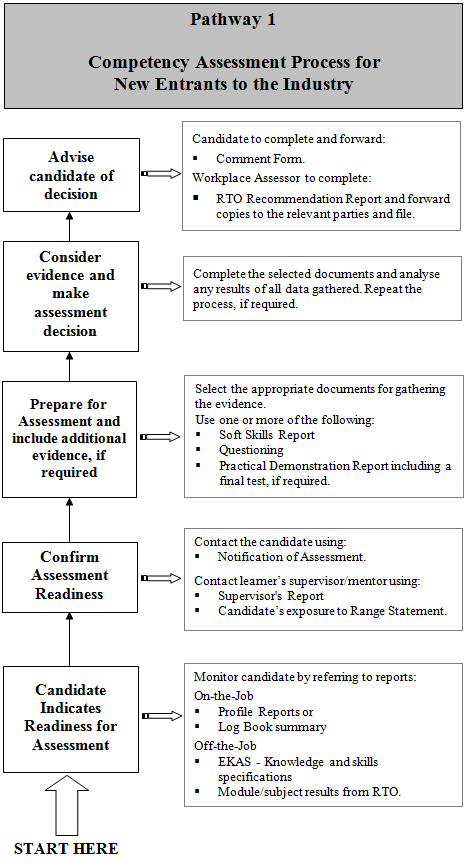
The Assessment Guidelines of this Training Package identify three assessment pathways for the Industry, as follows:

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, polices and workplace procedures; and

Demonstrated performance across a representative range of contexts from the prescribed items below:

* Verify compliance and functionality of general electrical installations as described as described in 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 administrating the process – samples included as Enclosure B
* assessment design materials Glossary of Terms – included as Enclosure C.

#### Trial the Assessment Procedure

It is very important to trial the assessment strategy. There is a need to make sure it is appropriate to the context in which the assessment is conducted. This will involve:

* a focus on the specific requirements of the competency standard unit being assessed
* consideration of the characteristics and background of the person being assessed to make sure the assessor supports the candidate in their understanding of the process and the skills and knowledge that need to be demonstrated
* use of assessment methods and instruments to make sure the evidence gathered:
* 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 E-Oz Energy Skills Australia 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 E-Oz Energy Skills Australia at website: www.e-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 E-Oz Energy Skills Australia at www.e-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 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |

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 - 2 | Involvement (circle yes or no) | | | Number of times |
|  | Planned the work | Yes | No |  |
| Carried out the work | Yes | No |  |
| Completed the work | Yes | No |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CSU - 3 | Involvement (circle yes or no) | | | Number of times |
|  | Planned the work | Yes | No |  |
| Carried out the work | Yes | No |  |
| Completed the work | Yes | No |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CSU - 4 | Involvement (circle yes or no) | | | Number of times |
|  | Planned the work | Yes | No |  |
| Carried out the work | Yes | No |  |
| Completed the work | Yes | No |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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

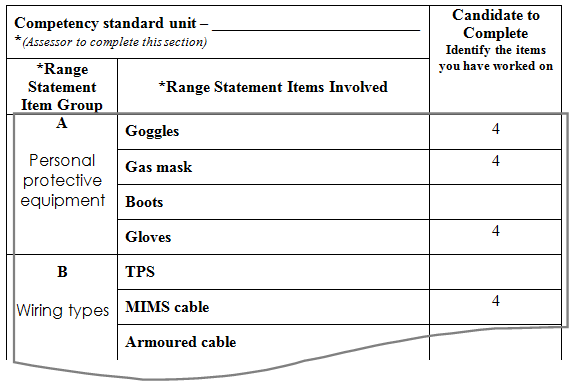
All the information provided is entirely factual:

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.



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: |
|  | | Candidate to Complete  Identify the items you have worked on |
| Range Statement Item Group | Range Statement Items Involved |
| 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 | | | |
| Taking into consideration the candidate technical development and work experiences, can they: | Yes | | Requires further training | No |
| Carry out duties with confidence |  | |  |  |
| Work in a safe manner with care for self and others |  | |  |  |
| Perform tasks with the minimal amount of waste or rework |  | |  |  |
| Complete tasks within a reasonable time |  | |  |  |
| Identify ways of improving how jobs are done |  | |  |  |
| Initiate action to improve processes or practices |  | |  |  |
| Work with others to achieve the work outputs of the group |  | |  |  |
| Work independently to achieve work outputs |  | |  |  |
| Resolve non-routine work functions |  | |  |  |
| Other comments: | | | | |
|  | | | | |
|  | | | | |
|  | | | | |
|  | | | | |
| Supervisor's/Assessor's Signature: Date: / / | | | | |

Enclosure A7 – ‘Supporting Skills’ Report

‘Supporting Skills’ refer to non-technical skills which are embedded in all the competency standard units. Demonstration of these is an essential part of competency assessment. Non-technical skills include:

* the ability to work independently or in teams while dealing with customers
* knowledge of and ability to follow enterprise policies
* communication skills used in following and issuing instructions
* knowledge of and ability to address quality assurance requirements
* personal management and development skills
* knowledge of and ability to address environmental protection and sustainable energy policies issues.

A Supporting Skills Report may be completed by an assessor, the candidate’s supervisor or another third party. Below is an outline of aspects covered by Supporting Skills.

Supporting Skills – What do they cover?

1. Enterprise Instructions

Technical manuals

Using enterprise or manufacturers’ technical manuals to ensure equipment and parts are installed to manufacturer specifications.

Quality systems

Plan, apply and contribute to quality systems.

Computers systems

Use enterprise documentation and record systems, including where appropriate the use of data-capture equipment such as computers, information systems and technologies.

Environmental and sustainable energy requirements

The safe disposal of used oil, grease and chemicals, the reduction of electrical energy by turning off lights and heating devices and minimising the impact that engineering practices have on the environment.

Occupational Health and Safety (OHS) requirements

Follow OHS and standard operating procedures in a manner that is safe to the individual and others.

Equal opportunity / Ethical practice / Cultural diversity

Become familiar with enterprise, equal employment opportunity polices, ethical practices and principles and cultural diversity.

Enterprise vehicles

Vehicle log book details are completed accurately, ensure the vehicle is kept clean and secured, and fuel and liquid levels are maintained.

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

Systematicproblemsolving

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.

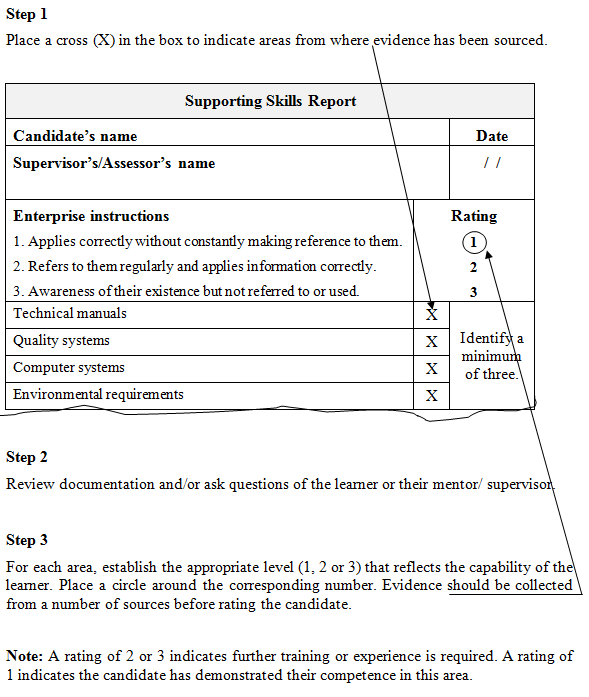
Competency Enhancement

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.



|  |  |  |  |
| --- | --- | --- | --- |
| Supporting Skills Report | | | |
| Candidate’sname | | | Date |
| Supervisor’s/Assessor’s name |  | | / / |
| Enterprise instructions  1. Applies correctly without constantly making reference to them.  2. Refers to them regularly and applies information correctly.  3. Awareness of their existence but not referred to or used. | | Rating (circle #)  1  2  3 | |
| Technical manuals | |  | Identify a minimum of three. |
| Quality systems | |  |
| Computer systems | |  |
| Environmental and sustainable energy requirements | |  |
| Occupational health and safety requirements | |  |
| Equal opportunity/Ethical practice/Cultural diversity | |  |
| Enterprise vehicles | |  |
| Customer relations  1. Customers are included in discussion effecting operational issues  2. Knowledge of but limited application of customer relations.  3. Requires more understanding of customer needs. | | Rating  1  2  3 | |
| Public | |  | Identify a minimum of two. |
| Workers providing other services | |  |
| Clients and land owners | |  |
| Authorities | |  |
| Self development  1. Desire to expand beyond the present job role.  2. Keeps abreast of new products and services.  3. Requires more understanding of the job role. | | Rating  1  2  3 | |
| Systematic problem solving | |  | Identify a minimum of two. |
| Personal well being | |  |
| Time management | |  |
| Professional development | |  |
| Team Work  1. Shares ideas, assists and accepts assistance from others  2. Accepts ideas and assistance from others.  3. Prefers not to assist or accept assistance from others | | Rating  1  2  3 | |
| Communications | |  | Identify a minimum of two. |
| Team involvement | |  |
| Competency enhancement | |  |

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 1Appropriate Coverage of Responses to Questions

| Element 1 – Planning for job/task functions (L1) |
| --- |
| Issues about involvement of personnel, enterprises operational requirements and the requirements of regulators would not normally be expected.  Coverage should involve such things as:  OHS   * Clarifying instructions given if any doubt exists as to what is required. * Checking with others involved if any personal protective equipment is needed. * Identifying hazards and risks associated with the wok, including any first aid and other similar requirements   Tools, equipment etc   * Identifying the tools and equipment that are required. * Explaining where any special equipment is located and how arrangements will be made to have them available, if required.   The work schedule   * Identifying:   - the work and relevant processes, procedures and personnel required  - the process of work to be undertaken  - the work site activities and issues to be attended to  - the authorities associated with the work  - any isolation procedures/permits that may apply. |

|  |
| --- |
| 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.   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) |  |
| consider when you are planning and preparing for work? | | | | | | |
| 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) |  |
| to ensure the work you carry out is done productively? | | | | | | |
| Issues to be covered in response to the main question – and -  follow up questions, if required | | | | | Coverage  (Y or N) | |
| What are the main OHS practices and precautions that are specific to this work function? | | | | |  | |
| What are the main engineering tasks involved in carrying out this job? | | | | |  | |
| What would you do if the work you were undertaking became technically dfficult 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) |  |
| What needs to be done to finalise the job? | | | | | | |
| 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

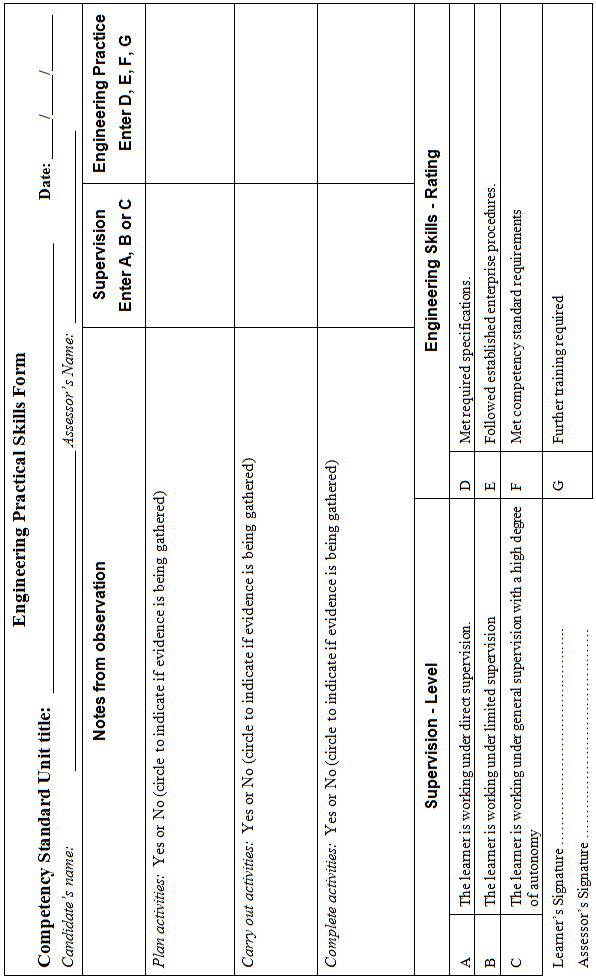
Observe the learner perform tasks related to the element(s) being assessed, checking that they address the required Performance Criteria. Record in the first column of the table under the heading ‘Notes from Observation’ key points to indicate whether the learner has acted in a way that meets specifications 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.



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 leaner. Assessors use this information in a holistic way to identify and analyse trends and anomalies against the predefined industry norms.

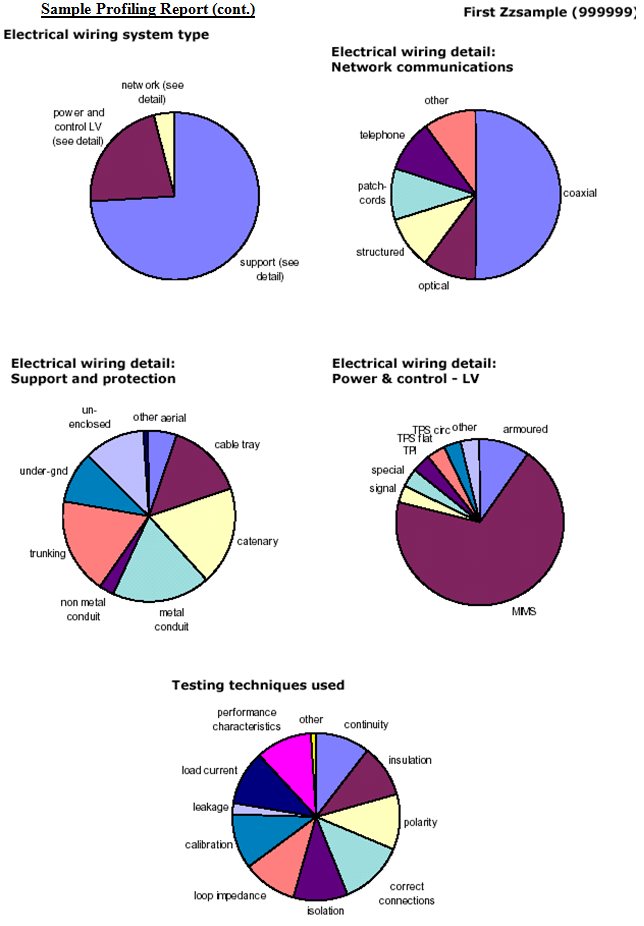
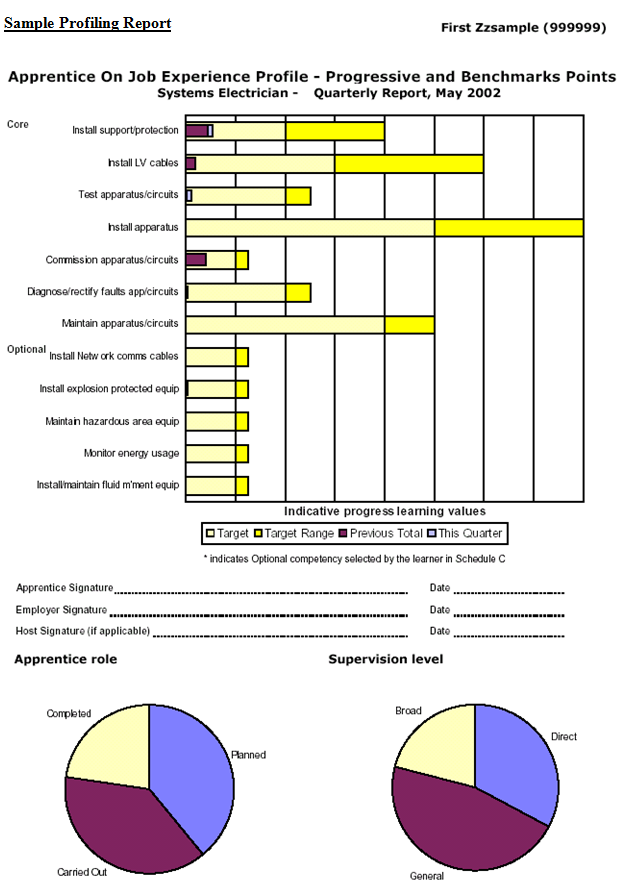
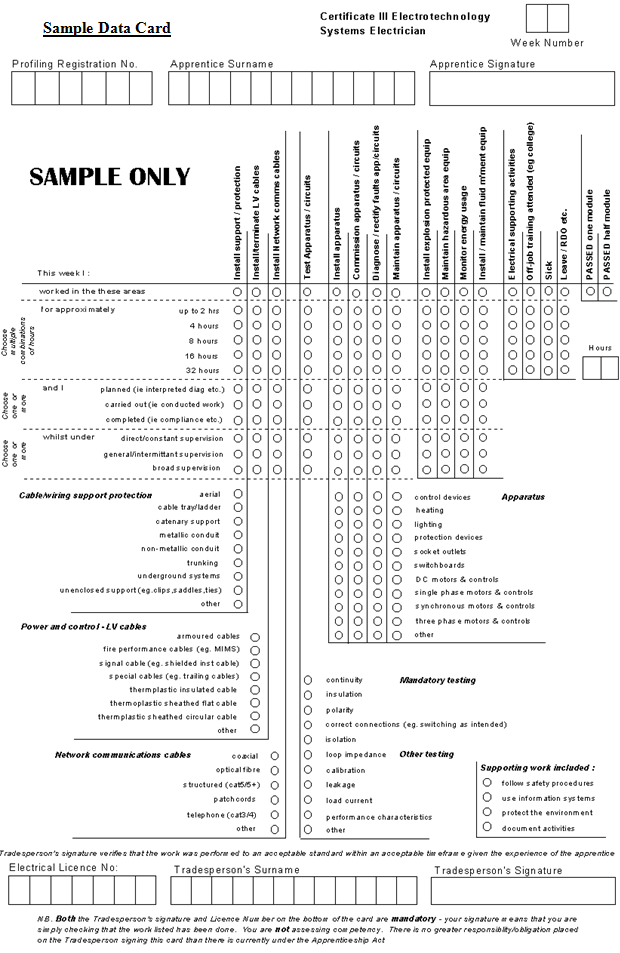
The advantages of electronic Profiling over other methods such as manually based log-books are that the computer does the extensive and laborious analysis that the assessor would otherwise have to do and that it is simple and directly reflective of the workplace experiences undertaken by the trainee. 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



### 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 No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I have read the Final Report for this assessment event and,

(tick)

Agree with the outcome.



or

Disagree with the outcome.



Comments:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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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 materials | | Assessment materials are any resources that assist in any part of the assessment process. They may include information for the candidate, assessment tools or resources for the quality assurance arrangements of the assessment system. |
| Assessment plan | An assessment plan is a document developed by an assessor that includes the elements and Competency Standard Units to be assessed, when the assessment will occur, how the assessment will occur, the assessment methods to be used and the criteria for the assessment decision. | |
| Assessment process | The assessment process is the agreed series of steps that the candidate undertakes within the enrolment, assessment, recording and reporting cycle. The process must suit the needs of all stakeholders and be both efficient and cost-effective. The agreed assessment process is often expressed as a flow chart. | |
| Assessment strategy | Assessment strategy means the approach to assessment and evidence gathering used by the assessor or RTO. It encompasses the assessment process, methods and assessment tools. | |
| Assessment system | An assessment system is a controlled and ordered process designed to ensure that assessment decisions made in relation to many individuals, by many assessors, in many situations are consistent, fair, valid and reliable. | |
| Assessment tool | An assessment tool contains both the instrument and the instructions for gathering and interpreting evidence:   * Instrument[s] — the specific questions or activity developed from the selected assessment method[s] to be used for the assessment. A profile of acceptable performance and the decision making rules for the assessor may also be included. * Procedures — the information/instructions given to the candidate and/or the assessor regarding conditions under which the assessment should be conducted and recorded. | |
| Candidate | A candidate is any person presenting for assessment. The candidate may be:   * a learner undertaking training in an institutional setting * a learner/worker undertaking training in a workplace * an experienced worker wanting their skills recognised * any combination of the above. | |
| Competency | The specification of knowledge and skill and the application of that knowledge and skill to the standards of performance required in the workplace. | |
| Competency standard | Competency standards define the competencies required for effective performance in the workplace. Standards are expressed in outcome terms and have a standard format comprising of Unit title, Unit descriptor, Elements of Competency, Performance Criteria, Range Statement and Evidence Guide. See also Unit[s] of Competency. | |
| Competency standard unit | Also see Unit of Competency | |
| Critical aspects of competency | A statement in a Unit of Competency that provides clear meaning as to what is to be achieved in the assessment process. | |
| Currency of evidence | Evidence that is relevant to what is outlined in competency units and not outdated or irrelevant. | |
| Dimensions of competency | The concept of competency includes all aspects of work performance and not only narrow task skills. The four components of competency are:   * task skills * task management skills * contingency management skills * job/role environment skills. | |
| Electronic Profiling | An innovative electronic based logbook system used by apprentices to record, and report on their workplace activities. A specially designed data entry card is used to capture work experiences (e.g. weekly) against industry approved competency standards and reported against industry-defined benchmarks. See Section 3.5 Assessment Processes within the Electrotechnology Industry and section Appendix A — Enclosure A11 Contracted entry level Profiling Model. | |
| 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 breath. 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 | Evidence is information gathered which, when matched against the performance criteria, provides proof of competency. Evidence can take many forms and be gathered from a number of sources. Assessors often categorise evidence in different ways for example:   * direct, indirect and supplementary sources of evidence * evidence collected by the candidate or evidence collected by the assessor * historical and recent evidence collected by the candidate and current evidence collected by the assessor.   Quality evidence is valid, authentic, sufficient and current. It enables the assessor to make the assessment judgement. | |
| Evidence gathering techniques | Evidence gathering technique means the particular technique or method used to gather different types of evidence. This may include methods or techniques such as questioning, observation, third party reports, interviews, simulations and portfolios. | |
| Evidence Guide | Evidence Guide is part of a Competency Standard Unit. Its purpose is to guide assessment of the unit in the workplace and/or a training environment. The Evidence Guide specifies the context of assessment, the critical aspects of evidence and the required or underpinning knowledge and skills. The Evidence Guide relates directly to the Performance Criteria and Range Statement defined in the Competency Standard Unit. | |
| Fairness | See section 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. | |
| 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 Training Organisation (RTO) | Registered Training Organisation (RTO) means a training organisation registered in accordance with the Australian Recognition Framework, within a defined scope of registration (see Scope of Registration). | |
| Reliability | See section 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 / Competency standard units | Competency Standard Unit means the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance required in the workplace. Competency Standard Units define the outcomes for training delivery and assessment and lead to the issuing of Australian Qualifications Framework qualifications and Statements of Attainment. See also Competency Standard. | |
| Validity | See section 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 www.training.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 E-Oz Energy Skills Australia http://www.e-oz.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) / Standards for NVR Registered Training Organisations 2012

A set of nationally agreed Standards to ensure the quality of vocational education and training services throughout Australia. The AQTF and the Standards for NVR Registered Training Organisations 2012 includes Standards detailing:

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 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. |
| 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 polices 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 genetic 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 is 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.) |
| Audit tools | 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:   * developed specifically for the purpose * adapted from existing tools * purchased or accessed from existing tools * and include: * 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 | An enclosed or partially enclosed space which-   * 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 * not have a safe oxygen level or * cause engulfment, and * may have restricted means for entry and exit.   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:  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).  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).  References:   * AS/NZS 2865:2001 Safe working in a confined space * Handbook - HB 213:2003 Guidelines for safe working in a confined space |
| Consultative arrangements | State and territory OHS legislation specifies obligations for workplace consultation. The workplace arrangements to meet these obligations may include:   * 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.   Factors that should be considered when developing consultative arrangements include:   * language * shift work and rostering arrangements * timing of information and data provision * literacy and numeracy levels * 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 | 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:   * 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   Refer also ‘Hierarchy of control’.  Workplace factors that impact on the controls selected and the implementation include:   * 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 | Devices, systems (including work methods) or approaches that reduce exposure to workplace hazards |
| 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 tenancy * integrates the emergency response plans as well as recovery * incorporates dealing with external agencies and support * addresses planning for recovery before crisis occur.   Documentation for crisis management plan may include   * 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.   The term ‘emergency management’ may also apply but ‘crisis management’ infers a more holistic approach encompassing the full range of business affairs. |
| Dangerous Goods (DG) | 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.  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. |
| Dangerous parts of plant | Potential contact or entrapment points to which the operator may be exposed during:   * operation * examination * lubrication * adjustment * maintenance. |
| Design | 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. It also includes any subsequent alteration of a designed-product (redesign or retrofit). |
| Design process | The stages of the design process include:  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). |
| Designed-product | 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. |
| Duty of care | 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.  The key factors relating to duty of care are that:   * 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 | 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. |
| Emergency | Events such as:   * 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.   May also be referred to ‘hazardous event’. |
| Emergency agency | Includes fire, police, ambulance, relevant government departments, hazardous materials response teams (HAZMAT) and OHS authorities |
| Emergency control organisation (ECO) is: | Structured group within the organisation that includes roles such as emergency controller, communications recorder, media liaison and employee support. |
| Emergency equipment | Includes:   * 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 | Are fitted to plant and equipment that have a risk of entrapment or other hazard and must be:   * 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 | Processes and instruments available to the OHS regulator under legislation may include:   * 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 | Includes:   * 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 | May include:   * 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  HR, IR and personnel management, including payroll  engineering and maintenance  information, data and records management  finance and auditing  environmental management  quality management. |
| Guarding | Devices fitted to machinery to separate the operator from dangerous parts of the machine. Devices may include:   * 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 | 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. |
| Hazards of long latency | Conditions, illnesses and other health risks that result from longer term exposure to specific triggers such as chemicals, noise, radiation and psychosocial factors. |
| Hazards of low frequency/high consequence | 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. |
| Hazard identification | The process of identifying sources of harm. Hazard identification may be required:   * 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.   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 | Include:   * 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 List of Designated Hazardous Substances (NOHSC:10005) or has been classified as a hazardous substance by the manufacturer or importer in accordance with the National Commission’s Approved Criteria for Classifying Hazardous Substances (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 Operability Study) | An advanced risk analysis technique that involves a 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:   * 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’) |
| (Sources of OHS) Information: | May be internal and include:   * 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. |
|  | Or external, including:   * 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. |
| Isolation | 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.  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 amongst the workforce for all situations in which danger to persons could arise from:   * 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   Also called ‘lock‑out’ and ‘tag‑out’. |
| Job Safety Analysis (JSA) | 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. |
| Legislation relevant to OHS | Includes Commonwealth and relevant State / Territory OHS specific acts and regulations as well as:   * workers compensation * privacy legislation * contract law * trade practices * criminal law * common law * industrial relations law * equal employment opportunity and anti- discrimination law |
| Life-cycle | 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. |
| Likelihood | The likelihood of the occurrence of the consequence, not the likelihood of the hazard or the particular scenario. |
| Locked out | 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, 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’. |
| Manual handling | The use of force applied by a person to lift, move, carry, push, pull or otherwise move or restrains an animate inanimate object. |
| Material Safety Data Sheet (MSDS) | 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. |
| Monitoring | Involves the use of valid and suitable techniques to estimate the exposure of employees to a hazard. |
| Musculoskeletal disorder (MSD) | 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. |
| Occupational Overuse Syndrome (OOS) | 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. |
| OHS inspection | 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’. |
| OHS specialists | Include:   * safety professionals * ergonomists * occupational hygienists * safety engineers * injury management advisors * health professionals. |
| Operator certification | The process by which a certificate to use or operate industrial equipment is issued by a certifying authority. |
| OHS management system (OHSMS) | 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.  Also referred to in broader context as systematic approaches to managing OHS. |
| Operational controls for plant and equipment | Should:   * 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 | 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. |
| Permit to work | A written authority document such as hot work and confined space entry that:   * 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 | As defined in National Standard for Plant includes:   * machinery, equipment (including scaffolding), appliance, implement or tool and any other component, fitting or accessory * fixed and or specified plant as cited in commonwealth, state and territory OHS legislation * 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 | The administrative process by which a certifying authority or state OHS regulator requires an organisation or industry to register plant, machinery and equipment. |
| Personal protective equipment (PPE) | Equipment designed to be worn by a person to provide protection from hazards, and may include:   * head protection * face and eye protection * respiratory protection * hearing protection * hand protection * clothing and footwear.   Personal protective equipment is considered the least satisfactory control measure. |
| Policies and procedures | Relevant to OHS include:   * 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 | Focus on assessing how successfully a workplace is performing through measuring OHS processes. |
| (OHS) Records | Requirements for OHS record keeping may be defined in:   * OHS legislation and regulations governing reporting of incidents and maintenance of records related to specific hazards, including chemical registers and material safety data sheets (MSDSs) * privacy legislation * organisational procedures.   OHS records may include:   * 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.   OHS records must be stored taking account of:   * 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 | Those with legislated OHS responsibilities include:   * 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.  Refer also to ‘Consequence’ and ‘Likelihood’. |
| Risk analysis | Analysing the risk to:   * 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.   Factors influencing the risk may be associated with   * equipment * work environment * work organisation * task * the individual/operator * frequency and duration of exposure * number of people exposed/ involved. |
| Risk assessment | Risk assessment is a two-step process that involves risk analysis and risk evaluation.  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’. |
| Risk evaluation | 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. |
| Risk management | 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). |
| Risk ranking | A process of rating risks according to their severity and likelihood. Common systems are based on matrices or nomograms but are usually highly subjective. |
| Risk register | Includes:   * 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; * possible control measures and dates for implementation.   May also be referred to as Hazard Register. |
| Safe Design | 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. |
| Stakeholders | In workplace OHS include:   * managers * supervisors * health and safety and other employee representatives * OHS committees * employees and contractors * the community. |
| Standards | Relevant to OHS include:   * 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 | Law created by legislation passed by government (acts and regulations) as distinct from common law. |
| (OHS) plan: | A document that:   * 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 | The overall process of work including:   * method by which the work is carried out * organisation of the work * selection and maintenance of tools and equipment * supervision and training * selection of workers * allocation of tasks and responsibilities. |
| Systemic approach to managing OHS | Requires:   * 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.   Factors that may impact on the implementation of a systematic approach to managing OHS may include:   * 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. |
| Tag out | Refer to ‘Isolation’. |
| Technical advisors | To the OHS function may include:   * legal practitioners * engineers (such as design, acoustic, mechanical, civil) * security and emergency response personnel * workplace trainers and assessors * maintenance and trade persons. |
| Wellness | Refer to ‘Health promotion’. |
| Workplace policies | 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. |
| Workplace inspection | Process of examining the workplace, usually with the aid of a checklist, to identify hazards and level of compliance with workplace procedures. |

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  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 |

All of the competency standard units have been developed in accordance with DOI 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

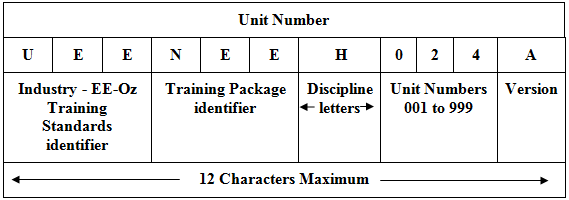
EKAS have been separated from the competency standard units to facilitate user friendliness for interpretation, applicability and future maintenance, however the EKAS section forms an integral part of each competency standard unit and all assessment and reporting processes require the confirmation of 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.



U = Utilities – DOI Identifier

EE = E-Oz Energy Skills Australia – 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 E-Oz Energy Skills Australia 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 E-Oz Energy Skills Australia.

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 particular technology, e.g. writes a report, which includes a detailed analysis of technology as, applied in a particular workplace or environment.  Draws on prior knowledge of the application of technology in researching the capacity of a new system, e.g. writes a briefing and recommends purchase or use of a particular system.  Uses technological principles to reduce constraints presented by environmental or physical capacity, e.g. writes a report, which compares the effectiveness and efficiency of manual and computerised record management systems.  Prepares a written or oral report, which critically evaluates the content, structure, and purpose of technical texts including graphic, diagrammatic or numerical information.  Adapts task instructions to suit changes in technology, e.g. writes plain English instructions for the operation of a new machine based on the manufacturer’s instructions.  Draws from a number of sources and uses computer skills to prepare a report, e.g. CV 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 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. | Compares and contrasts views on technology in newspaper articles.  Interprets the purposes and objectives for the use of technology after the reading a brochure or manual.  Selects technological practices to conform to the guidelines for health and safety, environmental impact and ethical practice, and uses them within those guidelines.  Uses guidelines to ensure technological equipment is used to its full capacity.  Uses a computer to prepare a typed report from a hand-drafted report.  Compares and contrasts different technologies and their impact, e.g. argues the case for new practices when using new technologies, reports on the effects of installation of new machinery.  Writes a report on the impact of a particular technology for a specific audience, e.g. management committees, tri-partite committees.  Reads a complex diagram to identify components and procedures for dealing with 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 supported by diagrams, sufficiently well to be able to locate and comprehend particular information required, e.g. programs a VCR to record two programs in advance.  Uses the author, title, key word and other search indexes of a library computer.  Comprehends short summary information on computer-managed learning packages to choose a relevant package to suit own needs.  Uses the word processing program on a computer to produce texts.  Writes simple instructions for using familiar technology, e.g. how to use an automatic teller machine.  Completes a formatted workplace test, e.g. damage or breakdown report.  Writes a brief report on uses of technology, e.g. for classroom, workplace, domestic or 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 test which may contain data in simple graphic, diagrammatic, formatted or visual form. | Reads short, relevant, explicit, clearly formatted texts related to technology, e.g. the author and title index of a library computer.  Chooses a computer assisted learning package, having read short descriptions of one or two programs, to acquire a defined skill or area of knowledge.  Writes a short description, e.g. describes a damaged part of a machine to facilitate repair.  Extracts information from a list with language and numeracy components, e.g. price lists of components for computer systems.  Records simple and routine information using the telephone, e.g. takes a phone message, on a form designed for this purpose.  Interprets instructions, which combine pictorial and written information, e.g. directions 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 details, location or calendar information in simple graphic, diagrammatic, formatted or visual form. | Recognisees very short, explicit, pictorial texts, e.g. understands logos related to worker safety before using a piece of machinery, reads letters on a keyboard.  Reads graphic instructions accompanying a new piece of technology to learn new information or skills about a technology or medium, e.g. uses an automatic teller machine by following instructions given graphically on the screen.  Types own name or single words into a computer-assisted learning program. |

Note: IoC\* - Indicators of Competency sub-level

### Writing

| Scale | IoC\* | Indicators of Competence | Technical Communication |
| --- | --- | --- | --- |
| 5 | 5.4  5.5 | 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. | Defines the purpose and objectives for the use of a particular technology, e.g. writes a report, which includes a detailed analysis of technology as, applied in a particular workplace or environment.  Draws on prior knowledge of the application of technology in researching the capacity of a new system, e.g. writes a briefing and recommends purchase or use of a particular system.  Uses technological principles to reduce constraints presented by environmental or physical capacity, e.g. writes a report, which compares the effectiveness and efficiency of manual and computerised record management systems.  Prepares a written or oral report, which critically evaluates the content, structure, and purpose of technical texts including graphic, diagrammatic or numerical information.  Adapts task instructions to suit changes in technology, e.g. writes plain English instructions for the operation of a new machine based on the manufacturer’s instructions.  Draws from a number of sources and uses computer skills to prepare a report, e.g. CV and job application letter. |
| 4 | 4.4  4.5 | 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. | Compares and contrasts views on technology in newspaper articles.  Interprets the purposes and objectives for the use of technology after the reading a brochure or manual.  Selects technological practices to conform to the guidelines for health and safety, environmental impact and ethical practice, and uses them within those guidelines.  Uses guidelines to ensure technological equipment is used to its full capacity.  Uses a computer to prepare a typed report from a hand-drafted report.  Compares and contrasts different technologies and their impact, e.g. argues the case for new practices when using new technologies, reports on the effects of installation of new machinery.  Writes a report on the impact of a particular technology for a specific audience, e.g. management committees, tri-partite committees.  Reads a complex diagram to identify components and procedures for dealing with a technical fault or breakdown. |

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 supported by diagrams, sufficiently well to be able to locate and comprehend particular information required, e.g. programs a VCR to record two programs in advance.  Uses the author, title, key-word and other search indexes of a library computer.  Comprehends short summary information on computer-managed learning packages to choose a relevant package to suit own needs.  Uses the word processing program on a computer to produce texts.  Writes simple instructions for using familiar technology, e.g. how to use an automatic teller machine.  Completes a formatted workplace test, e.g. damage or breakdown report.  Writes a brief report on uses of technology, e.g. for classroom, workplace, domestic or 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 texts related to technology, e.g. the author and title index of a library computer.  Chooses a computer assisted learning package, having read short descriptions of one or two programs, to acquire a defined skill or area of knowledge.  Writes a short description, e.g. describes a damaged part of a machine to facilitate repair.  Extracts information from a list with language and numeracy components, e.g. price lists of components for computer systems.  Records simple and routine information using the telephone, e.g. takes a phone message, on a form designed for this purpose.  Interprets instructions, which combine pictorial and written information, e.g. directions on how to operate a piece of machinery safely. |
| 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. understands logos related to worker safety before using a piece of machinery, reads letters on a keyboard.  Reads graphic instructions accompanying a new piece of technology to learn new information or skills about a technology or medium, e.g. uses an automatic teller machine by following instructions given graphically on the screen.  Types own name or single words into a computer-assisted learning program. |

Note: IoC\* - Indicators of Competency sub-level

### Numeracy

| Scale | IoC\* | Indicators of Competence | Technical Communication |
| --- | --- | --- | --- |
| 5 | 5.10  5.11  5.12 | Interprets, selects and investigates appropriate mathematical information and relationships highly embedded in an activity, item or text.  Selects and applies a wide range of mathematical strategies flexibly to generate solutions to problems across a broad range of contexts.  Uses a wide range of oral and written informal and formal language and representation including symbols, diagrams and charts to communicate mathematically. | Calculates distance, length and location using the trigonometry and geometry of triangles in relevant situations, e.g. locates grid reference on a map for a boat travelling on an given bearing with time and speed specified; uses dimensions provided on a scaled plan of a roof to find the pitch or slope of the roof. Calculates quantities of materials to title the roof applying a 4% allowance for wastage.  Plans and gathers information on a negotiated topic form a variety of sources including government, industry and media about relevant community or workplace issues. Organises information by grouping. Graphically represents and analyses information for a particular purpose. Presents, individually or in a team, a report expressing a viewpoint, which is substantiated by discussion of supporting statistical evidence.  Interprets and applies metric quantities and numbers in scientific notation, e.g. calculates the amount of oil in litres spilled from a tanker if it covers a surface area of water of approximately 1200 hectares (1.2 x 107m2) to a thickness of 6 x 103mm.  Uses financial formulae, e.g. simple and compound interest to calculate and contrast the interest incurred in borrowing money from financial institutions. |
| 4 | 4.10  4.11  4.12  4.13 | Selects and investigates appropriate mathematical information and relationships embedded in an activity, item or text.  Selects and applies an expanding range of mathematical strategies flexibly to solve problems in a variety of contexts.  Examines and questions the appropriateness, possible interpretations and implications of aspects of a mathematical activity.  Uses a range of oral and written informal and formal language and representation including symbols, diagrams and charts to communicate mathematically. | Uses ratio and scale to interpret dimensions on a basic plan.  Applies similarity and ratio to estimate and calculate lengths, e.g. finds height of a building, a tree.  Compares quality and costs of using imported vs. Australian tiles, discount vs. brand name paints.  Presents information in appropriate graphical format to show different interpretations and influences, e.g. analysis of government spending on education.  Applies formulae and interprets results relevant to a familiar practical situation, measuring the dimensions needed and substituting them into the formula, adjusting units where necessary, e.g. length of edging for circular garden or pond, capacity of a water tank or bath.  Uses area and perimeter to calculate a range of options, e.g. given a certain length of fencing, plan a range of options for paddock dimensions, which meet specific area requirements.  Calculates and contrasts monthly income from average sales, given a variety of salary options involving retainers and commission rates. |

Note: IoC\* - Indicators of Competency sub-level

Numeracy – continued

| Scale | IoC\* | Indicators of Competence | Technical Communication |
| --- | --- | --- | --- |
| 3 | 3.10  3.11  3.12  3.13 | Selects appropriate mathematical information embedded in a real life activity, item or text.  Selects and applies a range of mathematical strategies to solve problems in a number of contexts 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. | Uses a distance scale to find the shortest route between two locations on a map and considers road terrain conditions in deciding preferred route.  Expresses and calculates with metric quantities, eg interprets and costs quantities of cheese given different forms such as 350g, 0.35kg.  Measures common three-dimensional shapes, eg room, and represents the information on an appropriate diagram drawn to scale.  Calculates with common, fractions and metric measurements, eg adjusts the quantities in a recipe by halving or doubling to obtain the required amount.  Uses a variety of methods to analyse advertising by comparing savings on a number of different items, eg at 12% off, 15% off, 1/3 off, price reduced by $10.  Compares casual and permanent rates of pay over a given time span for work 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 of familiar objects, eg estimates 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, eg a person’s height, height of doorway. |