



Australian Government

Department of Education, Employment and Workplace Relations

AUR30308 Certificate III in Automotive Electrical Technology

Release: 2

AUR30308 Certificate III in Automotive Electrical Technology

Modification History

Five new AUR units of competency:

AURETH3001
AURETH3002
AURTTE3001
AURTTM3001
AURTTM3002

Thirteen AUR units of competency updated:

AURT300471B replaces AURT300471A
AURTTM3003 replaces AURT301357A
AURTTM3004 replaces AURT301383A
AURTTM3005 replaces AURT334606A
AURTTM3006 replaces AURT334608A
AURTTM3007 replaces AURT334808A
AURTTM3008 replaces AURT301383A
AURTTM3009 replaces AURT334708A
AURTTM3010 replaces AURT301359A
AURTTM3011 replaces AURT301483A
AURVNN4001 replaces AURV465101A
AURVNN4001 replaces AURV465102A
AURVNP4001 replaces AURV465201A

Six imported units of competency updated:

TLID1001A replaces TLID107C
TLID2004A replaces TLID407C
TLID2010A replaces TLID1007C
TLID2013A replaces TLID1307C
TLID3011A replaces TLID1107C
TLILIC2001A replaces TLILIC108A

Description

This qualification covers the skills and knowledge required to repair and maintain the electrical systems and components of cars and other vehicles within the automotive electrical service and repair industry. It is suitable for entry into the automotive electrical technology sector.

Job roles/employment outcomes

The Certificate III in Automotive Electrical Technology is intended to prepare new employees or recognise and develop existing workers who are repairing and maintaining electrical and electronic systems and components of cars and other vehicles.

Employment outcomes targeted by this qualification include:

- automotive electricians.

Application

This qualification is suitable for an Australian Apprenticeship pathway.

Pathways Information

Pathways into the qualification

This qualification may be accessed by direct entry. Credit will be granted towards this qualification to those who have completed AUR20408 Certificate II in Automotive Electrical Technology or other relevant qualifications.

Pathways from the qualification

Further training pathways from this qualification include AUR40208 Certificate IV in Automotive Technology or other relevant qualifications.

Additional qualification advice

The Certificate III in Automotive Electrical Technology may be attained as a generic qualification, or where a particular occupational outcome is required, may include a specialisation.

The following specialisation has been identified for this qualification:

- electronics.

Advice is provided at the end of this qualification on the recommended units of competency for this specialisation.

Where elective units of competency are packaged to suit a particular industry sector or occupational outcome, Registered Training Organisations (RTOs) might issue, for example, a:

Certificate III in Automotive Electrical Technology (specialising in electronics)	OR	Certificate III in Automotive Electrical Technology (electronics)
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It should be noted that a qualification with a specialisation does not change the title of the qualification, although RTOs may choose to record the specialisation *below* the title.

Licensing/Regulatory Information

Licensing considerations

Some jurisdictions require this qualification for licensing purposes. In addition some units in this qualification may have licensing or regulatory requirements, depending on the work context. Local regulations should be checked for details.

Entry Requirements

Not Applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

The following table contains a summary of the Employability Skills for this qualification as identified by the electrical technology sector of the automotive industry. The Employability Skills facets described here are broad industry requirements that may vary depending on qualification packaging options.

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	<ul style="list-style-type: none"> Clearly communicating workplace information and ideas with workplace colleagues (verbal and non-verbal), including use of automotive terms Completing workplace reports Using and contributing to workplace procedures Maintaining workplace records Communicating with colleagues and clients to handle verbal enquiries, such as clarifying instructions and responding to requests for information Communicating with people who speak languages other than English and in a cross-cultural context Interpreting the needs of customers Reading and interpreting workplace related documentation
Teamwork	<ul style="list-style-type: none"> Identifying and describing own role and role of others Working within a team Working with diverse individuals and groups Applying knowledge of own role to complete activities efficiently to support team activities and tasks
Problem solving	<ul style="list-style-type: none"> Recognising a workplace problem or a potential problem and taking appropriate action Determining problems needing priority action Referring problems outside area of responsibility to appropriate person and suggesting possible causes Seeking information and assistance as required to solve problems Using a range of problem-solving techniques Taking action to resolve concerns Developing practical responses to common breakdowns in workplace systems and procedures
Initiative and enterprise	<ul style="list-style-type: none"> Adapting to new and emerging situations in the workplace Being proactive and creative in responding to workplace problems, changes and challenges
Planning and organising	<ul style="list-style-type: none"> Planning own work requirements and prioritising actions to achieve required outcomes and ensure tasks are completed on

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	<p>time</p> <ul style="list-style-type: none">• Identifying risk factors and taking action to minimise risk
Self-management	<ul style="list-style-type: none">• Selecting and using appropriate equipment, materials, processes and procedures• Recognising limitations and seeking timely advice• Planning own work requirements, setting own work program and managing time to ensure tasks are completed on time• Following workplace documentation, such as codes of practice or operating procedures
Learning	<ul style="list-style-type: none">• Asking questions to gain information• Identifying sources of information, assistance and expert knowledge to expand knowledge, skills and understanding• Participating in self-improvement activities• Participating in development of workplace continuous improvement strategies• Helping others develop competency
Technology	<ul style="list-style-type: none">• Selecting and using appropriate equipment and materials• Operating diagnostic and test equipment• Performance testing of components, systems and equipment• Using tools and equipment efficiently and safely• Storing and caring for components, parts, tools, test equipment and support equipment• Using business technology to collect, analyse and provide information

Packaging Rules

Packaging Rules

To be awarded the Certificate III in Automotive Electrical Technology, competency must be achieved in **twenty eight (28)** units of competency.

- **five (5)** core units of competency
- **twenty three (23)** elective units of competency, as specified below:
 - a minimum of **nine (9)** elective units of competency from Group A Electrical group
 - a minimum of **six (6)** elective units of competency from Group B Electronics group
 - a maximum of **eight (8)** elective units from Group C, drawn from any combination of:
 - units not already chosen from Group A and Group B
 - Group C units listed
 - relevant units available in this Training Package, other endorsed Training Packages and accredited courses, where those units are aligned to Certificate II, III and IV qualifications
 - a maximum of **ten (10)** elective units may be selected from units aligned to Certificate II qualifications
 - a maximum of **two (2)** elective units may be selected from units aligned to Certificate IV qualifications.

Note:

Where prerequisite units are identified they must be counted in the total number of units required for completion of the qualification.

The following pairs of units must not be chosen together when achieving this qualification:

MEM05003B	Perform soft soldering
AURV223808A	Carry out soft soldering techniques

MEM05004C	Perform routine oxy acetylene welding
AURV223608A	Carry out oxy acetylene welding, thermal cutting and thermal heating procedures

MEM05007C	Perform manual heating and thermal cutting
AURV223608A	Carry out oxy acetylene welding, thermal cutting and thermal heating procedures

MEM05017D	Weld using gas metal arc welding process
AURV281308A	Carry out gas metal arc (MIG) welding procedures

Core units of competency

- Complete the following **five (5)** units of competency.

AURC270103A	Apply safe working practices
AURE224008A	Carry out soldering of electrical wiring/circuits
AURE320666B	Repair ignition systems
AURT271781A	Implement and monitor environmental regulations in the automotive mechanical industry
AURT366108A	Carry out diagnostic procedures

Elective units of competency**Group A - Electrical systems**

- Complete a minimum of **nine (9)** units of competency from the following list.

	Prerequisites
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		Prerequisites
AURE218664A	Remove and replace electrical/electronic units/assemblies	
AURE218670A	Service, maintain or replace batteries	
AURE218676A	Test, service and charge batteries	
AURE218708A	Carry out repairs to single electrical circuits	
AURE218764A	Remove, refit and test electrical componentry for normal operation following body repair activities	
AURE219331A	Install, test and repair low voltage wiring/lighting systems	
AURE219431A	Install, test and repair electrical security systems/components	
AURE219531A	Install ancillary electrical components	
AURE220140A	Manufacture and repair wiring harness/looms	
AURE318866A	Repair electrical systems	
AURE318966A	Repair instruments and warning systems	
AURE319145A	Overhaul charging system alternators	
AURE319166B	Repair charging systems	
AURE319245A	Overhaul starting motors	
AURE319266B	Repair starting systems	
AURE319271A	Inspect, service and repair AC electric motor drive systems	
AURE320031B	Install marine electrical systems and components	
AURE320066B	Diagnose and repair marine electrical systems and components	
AURETH3001	Depower battery electric vehicles	

		Prerequisites
AURETH3002	Service and maintain battery electric vehicles	AURETH3001

Group B - Electronic systems

- Complete a minimum of **six (6)** units of competency from the following list.

AURE320871A	Service and repair electronically controlled steering systems
AURE320971A	Service and repair electronically controlled suspension systems
AURE321066A	Repair electronic systems
AURE321171A	Service and repair electronic spark ignition engine management systems
AURE321271A	Service and repair electronic drive management systems
AURE321371A	Service and repair electronic body management systems
AURE321471A	Service and repair electronically controlled anti-lock braking systems
AURE321571A	Service and repair electronically operated traction control system
AURE321671A	Service and repair electronically operated stability control systems
AURE321771A	Service and repair electronic compression ignition engine management systems
AURE321831B	Install marine electronic systems and components
AURE321971A	Inspect, service and repair electronic management, monitoring and tracking systems

Group C - Other elective units

- The balance of units, to a maximum of **eight (8)**, may be drawn from any combination of:
 - units not already chosen from Group A and Group B
 - Group C units listed below
 - relevant units available in this Training Package, other endorsed Training Packages and accredited courses, where those units are aligned to Certificate II, III and IV qualifications.

Advanced technology

AURT477093A	Analyse and evaluate gas fuel system faults
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Brakes

AURE311666A	Repair electric braking systems
AURT210170A	Inspect and service braking systems
AURT210605A	Attach friction materials and radius grind
AURT210736A	Machine brake drums and brake disc rotors
AURT211170A	Inspect and service air braking systems
AURT310104A	Assemble and fit braking systems/components
AURT310166A	Repair hydraulic braking systems
AURT310171A	Inspect, service and repair auxiliary braking systems
AURT311166A	Repair air braking systems
AURT410145AA	Overhaul braking system components (light)
AURT410145BA	Overhaul braking system components (heavy)
AURT411145A	Overhaul air braking systems/components

Common

AURC270688A	Work effectively with others
AURC270789A	Communicate effectively in the workplace
AURC270889A	Communicate business information
AURC359554A	Provide technical guidance
AURC361101A	Adapt work processes to new technologies
AURC361230A	Inspect technical quality of work
AURC361337A	Maintain quality systems

Common	
AURC365722A	Estimate complex jobs
AURC465349B	Prepare a vehicle repair quotation
AURT471782A	Plan and manage compliance with environmental regulations in the mechanical repair industry
BSBCMN311B	Maintain workplace safety
BSBINN301A	Promote innovation in a team environment
HLTFA301B	Apply first aid
MSAENV272B	Participate in environmentally sustainable work practices
MSAENV472B	Implement and monitor environmentally sustainable work practices
TLID2010A	Operate a forklift
TLID1001A	Shift materials safely using manual handling methods
TLID3011A	Conduct specialised forklift operations
TLID2013A	Move materials mechanically using automated equipment
TLID2004A	Load and unload goods/cargo
TLILIC2001A	Licence to operate a forklift truck

Engines, systems and transmissions		Prerequisites
AURT200368A	Select and use bearings, seals, gaskets, sealants and adhesives	
AURT201164A	Remove and install engine assemblies	
AURT201170A	Inspect and service engines	
AURT202166B	Repair cooling systems	
AURT202170B	Inspect and service cooling systems	
AURT202608A	Carry out radiator repairs	

Engines, systems and transmissions		Prerequisites
AURT204670A	Inspect and service emission control systems	
AURT205123A	Fabricate exhaust system/components	
AURT205166A	Repair exhaust system components	
AURT206670A	Inspect and service transmissions (manual)	
AURT207170A	Inspect and service transmissions (automatic)	
AURT208170A	Service transmissions (hydrostatic)	
AURT212670A	Service final drive assemblies	
AURT213165A	Remove and refit driveline components	
AURT213170A	Service final drive (driveline)	
AURT304666A	Repair and replace emission control systems	
AURT305671A	Inspect and repair engine forced induction systems	
AURT306170A	Inspect, service and/or repair clutch assemblies and associated operating system components	
AURT308166A	Repair transmissions (hydrostatic)	
AURT334972A	Set, operate and monitor specialist machines	
AURT335108A	Carry out machining operations	
AURT401145A	Overhaul engines and associated engine components	
AURT406145A	Overhaul clutch assemblies	
AURT406645A	Overhaul transmissions (manual)	
AURT407145A	Overhaul transmissions (automatic)	
AURT408145A	Overhaul transmissions (hydrostatic)	
AURT412645A	Overhaul final drive assemblies	
AURTH301166A	Repair engines and associated engine components (heavy vehicle)	

Engines, systems and transmissions		Prerequisites
AURTH306666A	Repair transmissions - manual (heavy vehicle)	
AURTH307165A	Inspect, test and replace transmissions - automatic (heavy vehicle)	
AURTH307166A	Repair transmissions - automatic (heavy vehicle)	
AURTH312666A	Repair final drive assemblies (heavy vehicle)	
AURTH313166A	Repair final drive - driveline (heavy vehicle)	
AURTH404584A	Inspect, repair and diagnose alternative fuel systems for heavy vehicle engines	
AURTL301166A	Repair engines and associated engine components (light vehicle)	
AURTL306666A	Repair transmissions - manual (light vehicle)	
AURTL307166A	Repair transmissions - automatic (light vehicle)	
AURTL312666A	Repair final drive assemblies (light vehicle)	
AURTL313166A	Repair final drive - driveline (light vehicle)	
AURTTE3001	Apply knowledge of engine science	
AURTTM3001	Operate and monitor computer numerical control machines	
AURTTM3002	Repair bearing tunnels and connecting rods in engines	
AURTTM3003	Apply metal to rebuild engine components	
AURTTM3004	Assemble engine blocks and sub-assemblies	
AURTTM3005	Balance rotating and reciprocating engine components	
AURTTM3006	Perform advanced machining and blueprinting of engine components	
AURTTM3007	Carry out grinding operations	

Engines, systems and transmissions		Prerequisites
AURTTM3008	Dismantle and evaluate engine blocks and sub-assemblies	
AURTTM3009	Fit sleeves and bore and hone engine cylinders	
AURTTM3010	Heat treat, straighten and reclaim engine components	
AURTTM3011	Recondition engine cylinder heads	
MEM07005C	Perform general machining	MEM09002B MEM12023A MEM18001C

Fuel systems	
AURT203170B	Service petrol fuel systems
AURT203670B	Service diesel fuel injection systems
AURT303166B	Repair petrol fuel systems
AURT303666A	Repair diesel fuel systems
AURT304031A	Install LPG/CNG electrical control equipment
AURT304231A	Install LPG fuel systems
AURT304266A	Repair LPG fuel systems
AURT304270A	Service LPG fuel systems
AURT304331A	Install CNG fuel systems
AURT304366A	Repair CNG fuel systems
AURT304370A	Service CNG fuel systems
AURT304431A	Install LNG fuel systems
AURT304466A	Repair LNG fuel systems
AURT304470A	Service LNG fuel systems
AURT403145B	Overhaul petrol fuel system components

Fuel systems	
AURT403645A	Overhaul diesel fuel injection systems
AURT404284A	Diagnose LPG fuel system faults
AURT404384A	Diagnose CNG fuel system faults
AURT404484A	Diagnose LNG fuel system faults

General mechanical	
AURC252103A	Apply basic automotive troubleshooting processes
AURT200108A	Carry out servicing operations
AURT209170A	Service hydraulic systems
AURT209671A	Inspect, service and repair pneumatic systems
AURT222171A	Service, repair and replace air compressors/components
AURT222170A	Service air compressors and air lines
AURT222631A	Install air conditioning systems
AURT222670A	Service air conditioning systems
AURT223104A	Assemble and install refrigeration systems/components
AURT225156A	Read and interpret engineering drawings
AURT225191A	Produce drawings from design concepts
AURT225291A	Produce patterns and templates
AURT225667A	Use and maintain measuring equipment
AURT226008A	Carry out pre-repair operations (mechanical)
AURT270278A	Use and maintain workplace tools and equipment
AURT300373A	Synchronise plant/equipment
AURT300471B	Inspect, service and repair harvesting equipment
AURT300571A	Inspect, service and repair crop planting and seeding equipment

General mechanical	
AURT300671A	Inspect, service and repair spraying and spreading equipment
AURT300771A	Inspect, service and repair lift truck mast assemblies
AURT309131B	Install hydraulic systems to specified applications
AURT309140A	Manufacture and install fluid power hose assemblies
AURT309166A	Repair hydraulic systems
AURT309604A	Assemble and install pneumatic systems/components
AURT309627A	Identify and apply pneumatic wheeled traction performance enhancement systems (heavy vehicle)
AURT322645A	Overhaul air conditioning system components
AURT322666A	Repair/retrofit air conditioning systems
AURT325149A	Prepare engineering drawings
AURT365130A	Inspect vehicle systems and determine preferred repair action
AURT365508A	Carry out vehicle safety/roadworthy inspection
AURT366308A	Carry out advanced diagnostic procedures
AURT466208A	Carry out diagnosis of complex system faults
MEM09002B	Interpret technical drawing
MEM12023A	Perform engineering measurements
MEM18001C	Use hand tools
MEM18002B	Use power tools/hand held operations

Steering and suspension	
AURT215130A	Inspect steering systems
AURT215170A	Inspect and service steering systems
AURT216130A	Inspect suspension system

Steering and suspension	
AURT216170A	Inspect and service suspension systems
AURT316168A	Select and install performance enhanced suspension system products
AURT316171A	Service and rectify faults in lift assisted suspension systems
AURT316271A	Inspect, service and repair tracked type drive and support systems
AURT316316A	Determine compliance of steering and suspension modifications
AURT415145A	Overhaul steering system components
AURTH315166A	Repair steering systems (heavy vehicle)
AURTH316166A	Repair suspension systems (heavy vehicle)
AURTL315166A	Repair steering systems (light vehicle)
AURTL316166A	Repair suspension systems (light vehicle)
AURTM315166A	Repair steering systems (motorcycle)
AURTM316166A	Repair suspension systems (motorcycle)

Tyres, rims and wheels	
AURT217606A	Balance wheels and tyres
AURT217665A	Remove, fit and inspect wheel assemblies
AURT217668A	Select tyres and rims for specific applications (light)
AURT217766A	Remove, inspect, repair and fit tyres and tubes (light)
AURT217865A	Remove and refit wheel hubs and associated brake components
AURT217966A	Remove, inspect, repair and fit tyres and tubes (heavy)
AURT217985A	Fit tyres and rims for specific applications (heavy)
AURT317968A	Identify and fit tyres and rims for specific applications (heavy)
AURT318054A	Provide advice on the effects of wheel and tyre combinations

Tyres, rims and wheels	
AURT317172A	Reset steering system alignment adjustments to customer specifications
AURTH317108A	Carry out wheel alignment operations (heavy vehicle)
AURTL317108A	Carry out wheel alignment operations (light vehicle)

Vehicle body	
AURV327164A	Remove and replace supplementary restraint systems (SRS)
AURV328166A	Repair and align motorcycle frames
AURVNN4001	Evaluate vehicle bodywork for damage and identify repair requirements
AURVNP4001	Evaluate vehicle paintwork for damage and identify refinish requirements

Welding		Prerequisites
AURV223608A	Carry out oxy acetylene welding, thermal cutting and thermal heating procedures	
AURV223808A	Carry out soft soldering techniques	
AURV281108A	Carry out manual metal arc welding procedures	
AURV281208A	Carry out brazing procedures	
AURV281308A	Carry out gas metal arc (MIG) welding procedures	
AURV281408A	Carry out gas tungsten arc (TIG) welding procedures	
AURV281508A	Carry out spot welding procedures	
AURV323908A	Carry out thermoplastic welding procedures	
MEM05003B	Perform soft soldering	
MEM05004C	Perform routine oxy acetylene welding	

Welding		Prerequisites
MEM05007C	Perform manual heating and thermal cutting	
MEM05017D	Weld using gas metal arc welding process	MEM05050B MEM05051A MEM05052A MEM12023A MEM18001C MEM18002B MEM09002B
MEM05050B	Perform routine gas metal arc welding	
MEM05051A	Select welding processes	
MEM05052A	Apply safe welding practices	

Specialisation advice

Unit selection for a particular occupational stream must adhere to the packaging rules specified above.

Note: A specialisation does not alter the title of the qualification although RTOs may choose to record the specialist occupational stream. Refer to *Additional qualification advice*.