



Australian Government

Department of Education, Employment and Workplace Relations

AUR30308 Certificate III in Automotive Electrical Technology

Release: 1

AUR30308 Certificate III in Automotive Electrical Technology

Modification History

Not Applicable

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) |
|---|-----------|---|

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 | |
|---|--|
| | time <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.

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|-------------|---|
| AURC270103A | Apply safe working practices |
| AURE224008A | Carry out soldering of electrical wiring/circuits |
| AURE320666B | Repair ignition systems |

| | |
|-------------|---|
| AURC270103A | Apply safe working practices |
| 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 |
|--|----------------------|

| | | 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 | |

| | | Prerequisites |
|-------------|--|---------------|
| AURE320031B | Install marine electrical systems and components | |
| AURE320066B | Diagnose and repair marine electrical systems and components | |

Group B - Electronic systems

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

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

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

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

| Common | |
|---------------|---|
| AURC361230A | Inspect technical quality of work |
| AURC361337A | Maintain quality systems |
| AURC365722A | Estimate complex jobs |
| AURC465349B | Prepare a vehicle repair quotation |
| AURT471782A | Plan and manage compliance with environmental regulations in the mechanical repair industry |
| BSBCM311B | 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 |
| TLID1007C | Operate a forklift |
| TLID107C | Shift materials safely using manual handling methods |
| TLID1107C | Conduct specialised forklift operations |
| TLID1307C | Move materials mechanically using automated equipment |
| TLID407C | Load and unload goods/cargo |
| TLILIC108A | 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 | |

| Engines, systems and transmissions | | Prerequisites |
|---|--|----------------------|
| AURT202166B | Repair cooling systems | |
| AURT202170B | Inspect and service cooling systems | |
| AURT202608A | Carry out radiator repairs | |
| 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) | |
| AURT301357A | Rebuild engine components | |
| AURT301359A | Reclaim engine components | |
| AURT301383A | Dismantle, assemble and repair engine block and sub-assemblies | |
| AURT301483A | Recondition cylinder heads | |
| AURT304666A | Repair and replace emission control systems | |
| AURT305671A | Inspect and repair engine forced induction systems | |

| Engines, systems and transmissions | | Prerequisites |
|---|---|----------------------|
| AURT306170A | Inspect, service and/or repair clutch assemblies and associated operating system components | |
| AURT308166A | Repair transmissions (hydrostatic) | |
| AURT334606A | Balance engine components | |
| AURT334608A | Carry out blueprinting of engine components | |
| AURT334708A | Carry out reboring and honing of cylinders | |
| AURT334808A | Carry out grinding and facing operations | |
| 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) | |
| MEM07005C | Perform general machining | MEM09002B MEM12023A MEM18001C |

| Fuel systems | |
|---------------------|--|
|---------------------|--|

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|-------------|-----------------------------|
| AURT203170B | Service petrol fuel systems |
|-------------|-----------------------------|

| 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 |
| 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 |

| General mechanical | |
|---------------------------|---|
| 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 |
| AURT300471A | Inspect, service and repair harvesting equipment |
| AURT300571A | Inspect, service and repair crop planting and seeding equipment |
| 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 |

| General mechanical | |
|---------------------------|---|
| 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 |
| 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) |

| STEERING AND SUSPENSION | |
|--------------------------------|---|
| 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 |
| 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 |
| AURV465101A | Evaluate the bodywork of a vehicle with minor damage and identify repair requirements |
| AURV465102A | Evaluate the bodywork of a vehicle with extensive damage and identify repair requirements |

| VEHICLE BODY | |
|---------------------|--|
| AURV465201A | Evaluate the paintwork of a damaged vehicle 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 | |
| MEM05007C | Perform manual heating and thermal cutting | |
| MEM05017D | Weld using gas metal arc welding process | MEM05050B MEM05051A MEM05052A MEM12023A MEM18001C MEM18002B |

| Welding | | Prerequisites |
|----------------|---------------------------------------|----------------------|
| | | 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*.