Australian Government

AUR40612 Automotive Electrical Technology

Release 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

AUR40612 Certificate IV in Automotive Electrical Technology

Modification History

Release	Comment
Release 1	New qualifications

Description

This qualification covers the skills and knowledge required to service, diagnose and repair electrical systems and components as a master diagnostic technician on vehicles in the automotive service and repair industry. A range of advanced electrical diagnostic skills and knowledge is necessary and leadership and supervision of others would be expected.

Job roles and employment outcomes
The Certificate IV in Automotive Electrical Technology is a post-trade level qualification in the automotive body repair industry.
It is designed for a master diagnostic technician and covers a range of specialised functions in the electrical repair industry.
Job roles related to this qualification include:

- automotive electrical workshop manager or service manager
- automotive workshop technical service adviser
- automotive master diagnostic technician.

Application
This qualification is suitable for an Australian apprenticeship pathway.

Pathways Information

Pathways into the qualification
Credit may be granted towards this qualification by those who have completed AUR30312 Certificate III in Automotive Electrical Technology in this Training Package or other relevant qualifications.

Pathways from the qualification
Further training pathways from this qualification include AUR50112 Diploma of Automotive Management or other relevant qualifications.

Licensing/Regulatory Information

There are no specific licences that relate to this qualification. However, 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

Entry requirements
Those undertaking Certificate IV in Automotive Electrical Technology are required to have completed an automotive AUR30312 Certificate III in Automotive Electrical Technology or be able to demonstrate equivalent competency.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
The following table contains a summary of the Employability Skills as identified by the automotive industry for this qualification. 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	• understanding input from specialist personnel and technical representatives • providing guidance to others and clearly describing faults, problems and repair requirements • negotiating with other team members or supervisors regarding timing and progress of work activities and access to equipment • understanding and interpreting regulations, procedures, instructions and repair manuals • interpreting wiring diagrams and system schematics, and reading drawings relating to repair activities • using computers to obtain technical data and complete documentation • articulating complex ideas clearly • interpreting a range of complex and technical documents • analysing and evaluating records, reports and reference materials • understanding relevant definitions, terminology, symbols and language
Teamwork	• performing tasks as an individual while being responsive to supervisors and others • working effectively with others who may be of different ages, gender, race, religion and political persuasions • assisting other team members with tasks and providing advice on work processes and troubleshooting • seeking expert advice where appropriate • supporting team members in developing skills and knowledge • working in own role to support team activities • identifying and using the strengths of other team members
Problem solving	• identifying problems in a timely manner and developing practical solutions to problems or faults not fully covered by technical data • responding to emergencies or accidents according to regulatory and organisational requirements • identifying possible solutions for improving environmental and resource-efficient work practices

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
	• using mathematical techniques to relate diagnostic/test results to system or component performance and converting values between systems of measurement • finding, analysing and interpreting data that may be incomplete or have discrepancies • diagnosing customer service complaints and taking steps to improve the service • applying a range of problem-solving strategies • seeking information from various sources to determine the cause of the problem
Initiative and enterprise	• adapting to new situations that arise as a consequence of regulatory changes, revised technical data, practices and procedures • varying work practices and behaviour as a result of performance feedback from peers and supervisors • adapting competencies to the performance of a wide range of repair tasks • contributing to a process of continuous improvement and a willingness to support and participate in the effective introduction of new work practices • identifying learning opportunities to improve work practices • evaluating tasks to improve efficiency • promoting environmental and resource-efficient work practices
Planning and organising	• clarifying task objectives and required outcomes through discussion with supervisors and other team members • collecting, analysing and organising information relating to assigned repair tasks and confirming the purpose and required work outcomes • identifying and organising equipment and material or resource requirements • planning for contingencies
Self-management	• accepting responsibility for managing individual workload to meet target completion times or fit in with team milestones • evaluating own performance and identifying areas for improvement • managing time to independently complete tasks • planning and reviewing own work • using judgement and discretion with confidential information
Learning	• taking advantage of learning opportunities that arise internally and externally • adapting competencies to accommodate new ideas and techniques

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
	• using feedback from supervisors and peers to identify ways in which competence can be improved • participating in professional networks and associations to obtain and maintain skills and knowledge • seeking out and learning new ideas, skills and techniques
Technology	• operating diagnostic and test equipment • performance testing components, systems and equipment • using tools and equipment efficiently and safely • storing and caring for components, parts, tools, test equipment and support equipment • using computers and microfiche to obtain technical and repair data • using business technology to collect, analyse and provide information

Packaging Rules

To be awarded this qualification, competency must be demonstrated in **10 units** of competency, consisting of:

- **1 core unit**

plus

- **9 elective units**, of which:
  - up to **9** elective units may be chosen from the elective units listed below
  - up to **3** elective units may be chosen from a Certificate III qualification or above in this Training Package or another endorsed Training Package or accredited course, provided that the units chosen contribute to the vocational outcome of this qualification and do not duplicate the outcome of another unit chosen for the qualification.

Core units

Unit code	Unit title
Mechanical Miscellaneous – Technical	
AURTTA4021	Carry out diagnosis of complex system faults

Elective units

Unit code	Unit title	Prerequisite
Common – Foundation Skills		
AURAFA5006	Prepare technical reports	
AURAFA5007	Develop and document specifications and procedures	
Common – Information Technology		
AURAKA3002	Adapt work processes to new technologies	
Common – Loss Assessment or Repair Quoting		
AURANN4001	Prepare a vehicle repair quotation	
Common – Quality		
AURAQA3002	Inspect technical quality of work	
AURAQA3003	Maintain quality systems	
Common – Technical		

AURATA3004	Provide technical guidance	
AURATA3005	Estimate complex jobs	
Electrical – Technical – Brakes		
AURETB3001	Repair electric braking systems	
Electrical – Technical – Hybrid Vehicle and Battery Electric Vehicle		
AURETH3001	Depower battery electric vehicles	
AURETH3002	Service and maintain battery electric vehicles	AURETH3001
AURETH4003	Test and repair high voltage battery systems in battery electric vehicles	AURETH3001
AURETH4004	Diagnose and repair traction motor speed control device in battery electric vehicles	AURETH3001
AURETH4005	Diagnose and repair high voltage traction motors in battery electric vehicles	AURETH3001
AURETH4006	Diagnose and repair auxiliary motors and associated components in battery electric vehicles	AURETH3001
AURETH4007	Diagnose and repair system instrumentation and safety interlocks in battery electric vehicles	AURETH3001
AURETH4008	Diagnose and repair high voltage cabin heating and cooling systems in battery electric vehicles	AURETH3001
AURETH4009	Diagnose and repair DC to DC converters in battery electric vehicles	AURETH3001 AURETR3025
AURETH4010	Test high voltage batteries in hybrid electric vehicles	AURETR3025
AURETH4011	Deactivate and reinitialise power supply in hybrid electric vehicles	
AURETH4012	Service and maintain electrical components in hybrid electric vehicles	AURETH4011
AURETH4014	Diagnose complex faults in battery electric and hybrid electric vehicle systems	
Electrical – Technical – Electrical and Electronic		
AURETR2035	Demonstrate knowledge of petrol and diesel engine	

	operation	
AURETR3025	Test, charge and replace batteries	
AURETR4004	Diagnose complex electrical and electronic faults in vehicle convenience and entertainment systems	
AURETR4037	Diagnose complex electrical and electronic faults in light vehicle safety systems	
AURETR4038	Diagnose complex faults in motorcycle electrical and electronic systems	
AURETR4039	Diagnose complex electrical and electronic faults in light vehicle theft deterrent systems	
AURETR4040	Diagnose complex electrical and electronic faults in vehicle monitoring and protection systems	
AURETR5033	Develop and apply electronic systems modification	
AURETR5034	Develop and apply electrical systems modification	
Electrical – Technical – Air Conditioning and HVAC		
AURETU3004	Diagnose and repair air conditioning and HVAC systems	
AURETU3005	Retrofit and modify air conditioning and HVAC systems	
AURETU4006	Diagnose complex faults in air conditioning and HVAC systems	
AURETU4007	Overhaul air conditioning system components	
Mechanical Miscellaneous – Environment		
AURTEA4001	Manage environmental compliance in the mechanical repair industry	
Mechanical Miscellaneous – Loss Assessment or Repair Quoting		
AURTNA5001	Estimate and calculate costs to repair, maintain or modify a vehicle	
Mechanical Miscellaneous – Technical		
AURTTA4026	Diagnose complex faults in vehicle electric-over-hydraulic systems	

AURTTA3017	Carry out vehicle safety and roadworthy inspections	
Mechanical Miscellaneous – Technical – Alternative Fuels		
AURTTL3010	Install LPG, CNG and LNG electrical control equipment	
Imported Units		
BSBLED401A	Develop teams and individuals	
BSBINN301A	Promote innovation in a team environment	
BSBWHS401A	Implement and monitor WHS policies, procedures and programs to meet legislative requirements	
BSBWOR301B	Organise personal work priorities and development	
TAEDEL301A	Provide work skill instruction	
TAEDEL404A	Mentor in the workplace	

Custom Content Section

Not applicable.