



Australian Government

AUM12 Automotive Manufacturing

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AUM12 Automotive Manufacturing

Modification History

AUM12 Version 1 Modification History

Version	Release Date	Comments						
1	June 2012	Changes between this training package (AUM12) and previously endorsed training package (AUM08): Qualifications • 1 new AUM qualification • AUM40112 • 6 revised AUM qualifications • AUM10112 replaces AUM10108 • AUM20112 replaces AUM20108 • AUM20212 replaces AUM25108 • AUM30112 replaces AUM30108 • AUM30212 replaces AUM35108 • AUM50112 replaces AUM50108 Units of Competency • 1 new AUM unit • AUMGLM3001 Comply with heavy vehicle modification standards • 102 AUM unit codes updated to meet policy requirements • 10 AUM units removed • 22 new imported units • 8 imported units removed • 2 imported units updated/replaced with new imported units • Adoption of new numbering system for the AUM Training Package • Update to template for all units of competency • Recoding of all units of competency to conform with the Training Package Development Handbook The following units of competency have been removed from this Training Package: <table><tr><td>AUM8031B</td><td>Receive and store parts</td></tr><tr><td>AUM8033B</td><td>Select and dispatch parts</td></tr><tr><td>AUM8054B</td><td>Perform submerged arc welding operations (SAW)</td></tr></table>	AUM8031B	Receive and store parts	AUM8033B	Select and dispatch parts	AUM8054B	Perform submerged arc welding operations (SAW)
AUM8031B	Receive and store parts							
AUM8033B	Select and dispatch parts							
AUM8054B	Perform submerged arc welding operations (SAW)							

		AUM8055B	Perform oxyacetylene welding operations (OAW)
		AUM8073B	Control oven baking cycle
		AUM8093B	Test, service and replace battery
		AUM8131B	Install and commission air conditioning system kit
		AUM8132B	Install and commission refrigeration system kit
		AUM8133B	Remove and replace air conditioning system
		AUM8134B	Remove and replace refrigeration system
		Revised qualifications :	
• AUM10112 Certificate I in Automotive Manufacturing • AUM20112 Certificate II in Automotive Manufacturing Production - Passenger Motor Vehicle • AUM20212 Certificate II in Automotive Manufacturing Production - Bus, Truck and Trailer • AUM30112 Certificate III in Automotive Manufacturing Technical Operations - Passenger Motor Vehicle • AUM30212 Certificate III in Automotive Manufacturing Technical Operations Bus - Truck and Trailer • AUM50112 Diploma of Automotive Manufacturing			
New qualification:			
• AUM40112 Certificate IV in Automotive Manufacturing			
<i>See Modification History and Mapping of Units for further details</i>			

Imprint

AUM12 Automotive Manufacturing

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Preliminary Information

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 One – check whether this is the latest version by going to the National Training Information Service (www.ntis.gov.au) and locating information about the Training Package. Alternatively, contact **Auto Skills Australia** 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.

Version modification history

The version details of this endorsed Training Package are in the table below. The latest information is at the top of the table.

Version	Release Date	Comments
Version 1	June 2012	Preliminary release - total review of AUM08

Summary of AQF qualifications in AUM12 Automotive Manufacturing Training Package Version 1

Qualification Code	National Qualification Title
AQF I	
AUM10112	Certificate I in Automotive Manufacturing
AQF II	
AUM20112	Certificate II in Automotive Manufacturing Production – Passenger Motor Vehicle

Qualification Code	National Qualification Title
AUM20212	Certificate II in Automotive Manufacturing Production – Bus, Truck and Trailer
AQF III	
AUM30112	Certificate III in Automotive Manufacturing Technical Operations – Passenger Motor Vehicle
AUM30212	Certificate III in Automotive Manufacturing Technical Operations – Bus, Truck and Trailer
AQF IV	
AUM40112	Certificate IV in Automotive Manufacturing
Diploma	
AUM50112	Diploma of Automotive Manufacturing

Summary of Units of Competency in AUM12 Automotive Manufacturing Training Package and their Pre-Requisite Requirements

Unit code	Unit title	Pre-requisite
A: Common		
ABA: Common - Support and Logistics		
AUMABA3001	Perform forklift driving and lifting operations	None
AUMABA3002	Operate load shifting equipment	None
ABM: Common - Support and Logistics - Manufacture		
AUMABM4001	Control stock	None
AFA: Common - Foundation and Employability Skills		
AUMAFA1001	Manage personal career goals	None
AUMAFA2002	Maintain effective workplace relationships	None
AKM: Common - Technology (Computing) - Manufacture		

Unit code	Unit title	Pre-requisite
AUMAKM4001	Program and monitor computerised equipment	None
AUMAKM5002	Produce computer-aided drawings	None
AMA: Common - Teamwork, Supervision and Management		
AUMAMA2001	Manage personal workplace	None
AUMAMA2002	Work effectively with others in teams	None
AUMAMA4003	Prepare new product designs	None
AUMAMA5004	Coordinate project activities	None
AMM: Common - Teamwork, Supervision and Management - Manufacture		
AUMAMM3001	Influence and lead work groups in an automotive manufacturing environment	None
ANA: Common - Loss Assessment or Repair Quoting		
AUMANA3001	Prepare and document quotation	None
AQA: Common - Quality		
AUMAQA4001	Apply quality assurance techniques	None
ASA: Common - Health and Safety		
AUMASA2001	Monitor and maintain a safe workplace and environment	None
ASM: Common - Health and Safety - Manufacture		
AUMASM3001	Maintain a safe automotive manufacturing work environment	None
ATA: Common - Technical		
AUMATA2001	Develop and produce documentation and procedures	None
AUMATA3002	Conduct final inspections and functional tests	None
AUMATA3003	Rectify faults in vehicle metal components	None
AUMATA3004	Rectify mechanical faults on assembled vehicles	None
AUMATA3005	Rectify assembly faults in assembled vehicles	None

Unit code	Unit title	Pre-requisite
AUMATA4006	Provide technical advice	None
AUMATA4007	Conduct simulated or road performance test	None
AUMATA5008	Produce drawings manually	None
ATE: Common - Technical - Engines		
AUMATE3001	Rework production engines	None
ATK: Common - Technical - Tools and Equipment		
AUMATK1001	Select and use tools and equipment in an automotive manufacturing environment	None
AUMATK2002	Prepare, use and operate equipment, tools and machinery	None
AUMATK3003	Monitor and maintain equipment, tools and machinery	None
AUMATK4004	Use measuring equipment	None
AUMATK4005	Calibrate measuring equipment in automotive development	None
AUMATK4006	Test plant, tooling, equipment, product or systems	None
AUMATK4007	Install plant, equipment or systems	None
AUMATK4008	Maintain plant, tooling, equipment or systems	None
AUMATK4009	Repair plant, tooling, equipment or systems	None
AUMATK4010	Manufacture or modify plant, tooling, equipment or systems	None
AUMATK4011	Interpret manuals, drawings and circuits for plant, tooling, equipment or systems	None
ATN: Common - Technical - Body		
AUMATN3001	Conduct structural rectification of vehicle bodies	None
ATP: Common - Technical - Paint		
AUMATP3001	Rectify paintwork	None
AUMATP3002	Control paint line production processes	None
ATR: Common - Technical - Electrical and Electronic		

Unit code	Unit title	Pre-requisite
AUMATR3001	Rectify electrical faults on assembled vehicles	None
AUMATR4002	Use sensors to acquire motor vehicle data for development purposes	None
ATS: Common - Technical - Fabrication		
AUMATS2001	Stamp and press parts	None
ATW: Common - Technical - Welding, Grinding, Machining and Soldering		
AUMATW3001	Test welds ultrasonically	None
AUMATW4002	Conduct welding inspection	None
F: Manufacturing – Passenger Vehicle		
FBK: Passenger Vehicle - Support and Logistics -Tools and Equipment		
AUMFBK2001	Receive and dispatch materials, equipment and tools	None
FBM: Passenger Vehicle - Support and Logistics - Manufacture		
AUMFBM2001	Prepare and process materials and components	None
FMM: Passenger Vehicle - Teamwork, Supervision and Management - Manufacture		
AUMFMM3001	Reduce cycle time in work processes	None
AUMFMM3002	Reduce waste in work processes	None
AUMFMM3003	Plan and organise production	None
FQM: Passenger Vehicle - Quality - Manufacture		
AUMFQM2001	Monitor and maintain continuous improvement of systems and processes	None
AUMFQM3002	Sustain quality standards	None
AUMFQM3003	Apply visual factory principles and practices to an automotive manufacturing environment	None
FTA: Passenger Vehicle - Technical		
AUMFTA3001	Document designs	None

Unit code	Unit title	Pre-requisite
AUMFTA3002	Conduct die coating	None
AUMFTA3003	Conduct tool setting	None
AUMFTA3004	Monitor and maintain metals treatment plant operations	None
AUMFTA4005	Analyse a test vehicle for research purposes	None
AUMFTA5006	Produce research reports	None
AUMFTA5007	Seek, evaluate, organise and prepare information	None
FTE: Passenger Vehicle - Technical - Engines		
AUMFTE3001	Conduct engine hot test	None
FTK: Passenger Vehicle - Technical - Tools and Equipment		
AUMFTK5001	Establish a test or trial for components of plant, tooling, equipment or systems	None
FTM: Passenger Vehicle - Technical - Manufacture		
AUMFTM3001	Undertake preliminary fault finding and machine reset	None
AUMFTM5002	Create new product designs	None
AUMFTM5003	Develop conceptual models and prototypes	None
FTQ: Passenger Vehicle - Technical - Driveline and Drivetrain (Fuel Drives)		
AUMFTQ3001	Install engine and drive train	None
G: Manufacturing – Bus, Truck and Trailer		
GCA: Bus, Truck and Trailer - Sales		
AUMGCA2001	Provide customer service	None
GLM: Bus, Truck and Trailer - Regulatory or Legal - Manufacture		
AUMGLM3001	Comply with heavy vehicle modification standards	None
GMA: Bus, Truck and Trailer - Teamwork, Supervision and Management		
AUMGMA3001	Participate in workplace productivity	None
GMM: Bus, Truck and Trailer - Teamwork, Supervision and Management -		

Unit code	Unit title	Pre-requisite
Manufacture		
AUMGMM3001	Contribute to workplace relationships and processes	None
GQA: Bus, Truck and Trailer - Quality		
AUMGQA3001	Inspect work and apply organisation technical quality standards	None
GTA: Bus, Truck and Trailer - Technical		
AUMGTA2001	Read and interpret working drawings and work orders	None
AUMGTA3002	Service after assembly	None
GTB: Bus, Truck and Trailer - Technical - Brakes		
AUMGTB3001	Assemble and install braking system kit	None
GTD: Bus, Truck and Trailer -Technical - Steering and Suspension		
AUMGTD3001	Perform wheel alignment operations	None
GTG: Bus, Truck and Trailer - Technical - Glazing		
AUMGTG3001	Install fixed and moveable glass components	None
GTM: Bus, Truck and Trailer - Technical - Manufacture		
AUMGTM2001	Assemble components	None
AUMGTM2004	Install and fit out components	
AUMGTM3002	Assemble frame and axle	None
AUMGTM3003	Install or replace mechanical units and assemblies	None
AUMGTM3005	Read and interpret engineering drawings and job specifications	None
AUMGTM3006	Assemble and install hydraulic system kit	None
AUMGTM3007	Assemble and install pneumatic system kit	None
AUMGTM3008	Bond and repair components using fibreglass reinforced plastic techniques	None
GTN: Bus, Truck and Trailer - Technical - Body		

Unit code	Unit title	Pre-requisite
AUMGTN3001	Rectify and replace vehicle body panels and ancillary fittings	None
GTP: Bus, Truck and Trailer - Technical - Paint		
AUMGTP3001	Finish surfaces for painting	None
AUMGTP3002	Rework paint faults	None
GTR: Bus, Truck and Trailer - Technical - Electrical and Electronic		
AUMGTR3001	Install or replace electrical and electronic units and assemblies	None
AUMGTR3002	Manufacture or modify wiring harnesses	None
AUMGTR3003	Perform minor modifications and repairs to electrical circuits and systems	None
GTS: Bus, Truck and Trailer - Technical - Fabrication		
AUMGTS3001	Prepare materials for fabrication using jigs and fixtures	None
AUMGTS3002	Prepare materials for fabrication using manual processes	None
AUMGTS3003	Fabricate plugs	None
AUMGTS3004	Fabricate parts for sub-assemblies	None
GTT: Bus, Truck and Trailer - Technical - Trimming and Upholstery		
AUMGTT2001	Apply trim to components	None
GTW: Bus, Truck and Trailer - Technical - Welding, Grinding, Machining and Soldering		
AUMGTW3001	Conduct basic welding, thermal cutting, heating and gouging operations	None
AUMGTW3002	Conduct mechanical cutting operations	None
AUMGTW3003	Perform manual metal arc welding operations	None
AUMGTW3004	Perform gas tungsten arc welding operations	None
AUMGTW3005	Perform gas metal arc welding operations	None

Unit code	Unit title	Pre-requisite
AUMGTW3006	Machine parts	None
GTY: Bus, Truck and Trailer - Technical - Chassis and Frame		
AUMGTY3001	Paint chassis or panels	None
AUMGTY3002	Mount and install assembled component to chassis or frame	None
AUMGTY3003	Modify or rectify chassis and frame and associated components	None

Imported Units of Competency in AUM12 Automotive Manufacturing Training Package

Unit code	Unit title	Origin
AURC172003A	Identify environmental regulations and best practice in workplace or business	AUR05
AURC251677A	Use numbers in the workplace	AUR05
AURC270789A	Communicate effectively in the workplace	AUR05
AURC272003A	Apply environmental regulations and best practice in a workplace or business	AUR05
AURC472082A	Plan and manage compliance with environmental regulations in a workplace or business	AUR05
AURE224008A	Carry out soldering of electrical wiring/circuits	AUR05
AURM441976B	Test engines using a dynamometer	AUR05
AURT211170A	Inspect and service air braking systems	AUR05
AURT216130A	Inspect suspension systems	AUR05
AURT216170A	Inspect and service suspension systems	AUR05
AURT311166A	Repair air braking systems	AUR05
AURT411145A	Overhaul air braking systems/components	AUR05

Unit code	Unit title	Origin
AURT466208A	Carry out diagnosis of complex system faults	AUR05
AURT570093A	Analyse and evaluate light vehicle steering and suspension system faults	AUR05
AURT570193A	Analyse and evaluate light vehicle driveline system faults	AUR05
AURT570293A	Analyse and evaluate light vehicle engine and fuel system faults	AUR05
AURT570393A	Analyse and evaluate light vehicle braking system faults	AUR05
AURT575093A	Analyse and evaluate electrical and electronic faults in stability/steering/suspension systems	AUR05
AURT575193A	Analyse and evaluate electrical and electronic faults in electric over hydraulic systems	AUR05
AURT575293A	Analyse and evaluate electrical and electronic faults in engine management systems	AUR05
AURT575393A	Analyse and evaluate electrical and electronic faults in transmission/driveline systems	AUR05
AURT575493A	Analyse and evaluate electrical and electronic faults in braking systems	AUR05
AURT575593A	Analyse and evaluate electrical and electronic faults in safety systems	AUR05
AURT575693A	Analyse and evaluate electrical and electronic faults in monitoring/protection systems	AUR05
AURT575893A	Analyse and evaluate electrical and electronic faults in convenience and entertainment systems	AUR05
AURT575993A	Analyse and evaluate electrical and electronic faults in theft deterrent systems	AUR05
AURT576093A	Analyse and evaluate electrical and electronic faults in electric and hybrid vehicle systems	AUR05
AURT576193A	Analyse and evaluate electrical and electronic faults in climate control systems	AUR05
AURT576520A	Develop and apply electrical systems modification	AUR05
AURT576620A	Develop and apply electronic systems modification	AUR05

Unit code	Unit title	Origin
AURT577120A	Develop and apply gas fuel systems modification	AUR05
AURT577520A	Prepare technical reports	AUR05
AURTH316166A	Repair suspension systems (heavy vehicle)	AUR05
BSBCMM101A	Apply basic communication skills	BSB07
BSBCMN311B	Maintain workplace safety	BSB07
BSBDIV301A	Work effectively with diversity	BSB07
BSBINM301A	Organise workplace information	BSB07
BSBINM302A	Utilise a knowledge management system	BSB07
BSBINN301A	Promote innovation in a team environment	BSB07
BSBLED401A	Develop teams and individuals	BSB07
BSBOHS501B	Participate in the coordination and maintenance of a systematic approach to managing OHS	BSB07
BSBPMG403A	Apply cost management techniques	BSB07
BSBPMG501A	Manage application of project integrative processes	BSB07
BSBPMG504A	Manage project costs	BSB07
BSBPMG508A	Manage project risk	BSB07
BSBRKG304B	Maintain business records	BSB07
BSBRSK401A	Identify risk and apply risk management processes	BSB07
BSBWOR502B	Ensure team effectiveness	BSB07
ICAICT103A	Use, communicate and search securely on the internet	ICA11
MEM13014A	Apply principles of occupational health and safety in the work environment	MEM05
MSACMC210A	Manage the impact of change on own work	MSA07
MSACMC411A	Lead a competitive manufacturing team	MSA07
MSACMS200A	Apply competitive manufacturing practices	MSA07

Unit code	Unit title	Origin
MSACMS201A	Sustain process improvements	MSA07
MSACMS400A	Implement a competitive manufacturing system	MSA07
MSACMS401A	Ensure process improvements are sustained	MSA07
MSACMT220A	Apply quick changeover procedures	MSA07
MSACMT221A	Apply Just in Time (JIT) procedures	MSA07
MSACMT230A	Apply cost factors to work practices	MSA07
MSACMT231A	Interpret product costs in terms of customer requirements	MSA07
MSACMT240A	Apply 5S procedures in a manufacturing environment	MSA07
MSACMT250A	Monitor process capability	MSA07
MSACMT251A	Apply quality standards	MSA07
MSACMT260A	Use planning software systems in manufacturing	MSA07
MSACMT261A	Use SCADA systems in manufacturing	MSA07
MSACMT280A	Undertake root cause analysis	MSA07
MSACMT421A	Facilitate a Just In Time (JIT) system	MSA07
MSACMT430A	Improve cost factors in work practices	MSA07
MSACMT432A	Analyse manual handling processes	MSA07
MSACMT440A	Lead 5S in a manufacturing environment	MSA07
MSACMT441A	Facilitate continuous improvement in manufacturing	MSA07
MSACMT451A	Mistake proof a production process	MSA07
MSACMT452A	Apply statistics to processes in manufacturing	MSA07
MSACMT453A	Use six sigma techniques	MSA07
MSACMT460A	Facilitate the use of planning software systems in manufacturing	MSA07
MSACMT482A	Assist in implementing a proactive maintenance strategy	MSA07

Unit code	Unit title	Origin
MSAENV272B	Participate in environmentally sustainable work practices	MSA07
MSAENV472B	Implement and monitor environmentally sustainable work practices	MSA07
MSAENV672B	Develop workplace policy and procedures for environmental sustainability	MSA07
MSAPMSUP390A	Use structured problem solving tools	MSA07
MSL924002A	Use laboratory application software	MSL09
MSL973001A	Perform basic tests	MSL09
MSL973007A	Perform microscopic examination	MSL09
MSS404050A	Undertake process capability improvements	MSS11
MSS404052A	Apply statistics to operational processes	MSS11
TLIA3017A	Identify products and store to specifications	TLI10
TLIA3023A	Coordinate stocktakes	TLI10
TLIA4028A	Assess and monitor optimum stock levels	TLI10
TLID3036A	Lift and move load using a mobile crane	TLI10

Summary Mapping of AUM12 Automotive Manufacturing Training Package to AUM08 Automotive Manufacturing Training Package

E= equivalent

N= not equivalent

Code	Qualification Title	Relationship	E/N	Comment in relationship to Training Package AUM08v1.1
AUM10112	Certificate I in Automotive Manufacturing	Replaces AUM10108 ISC update equivalent	E	Revised qualification Qualification and unit code recoded to meet policy requirements

Code	Qualification Title	Relationship	E/N	Comment in relationship to Training Package AUM08v1.1
AUM20112	Certificate II in Automotive Manufacturing Production – Passenger Motor Vehicle	Replaces AUM20108 Revised qualification requirements	E	Revised qualification Qualification and unit codes recoded to meet policy requirements AUM units removed New AUM units added New imported units added
AUM20212	Certificate II in Automotive Manufacturing Production – Bus, Truck and Trailer	Replaces AUM25108 Revised qualification requirements	E	Revised qualification Qualification and unit codes recoded to meet policy requirements Packaging rules have changed AUM units removed New AUM units added New imported units added Imported units removed
AUM30112	Certificate III in Automotive Manufacturing Technical Operations – Passenger Motor Vehicle	Replaces AUM30108 Revised qualification requirements	E	Revised qualification Qualification and unit codes recoded to meet policy requirements Packaging rules have changed
AUM30212	Certificate III in Automotive Manufacturing Technical Operations – Bus, Truck and Trailer	Replaces AUM35108 Revised qualification requirements	E	Revised qualification Qualification and unit codes recoded to meet policy requirements Packaging rules have changed AUM units removed

Code	Qualification Title	Relationship	E/N	Comment in relationship to Training Package AUM08v1.1
				New AUM units added New imported units added Imported units removed
AUM40112	Certificate IV in Automotive Manufacturing	Replaces AUM40108 and AUM45108 Revised qualification requirements	N	New qualification Packaging rules have changed Unit codes have been recoded to meet policy requirements
AUM50112	Diploma of Automotive Manufacturing	Replaces AUM50108 ISC update equivalent	E	Revised qualification Qualification and unit code recoded to meet policy requirements

Mapping to units of competency – AUM12v1

E= equivalent

N= not equivalent

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
		AUMGLM3001	Comply with heavy vehicle modification standards	New unit	N/A
AUM1001A	Manage personal career goals	AUMAFA1001	Manage personal career goals	Unit code updated to meet policy requirements	E
AUM1002A	Select and use tools and equipment in an automotive manufacturing	AUMATK1001	Select and use tools and equipment in an automotive	Unit code updated to meet policy	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
	environment		manufacturing environment	requirements	
AUM2001B	Monitor and maintain a safe workplace and environment	AUMASA2001	Monitor and maintain a safe workplace and environment	Unit code updated to meet policy requirements	E
AUM2002B	Receive and dispatch materials, equipment and tools	AUMFBK2001	Receive and dispatch materials, equipment and tools	Unit code updated to meet policy requirements	E
AUM2003B	Prepare and process materials and components	AUMFBM2001	Prepare and process materials and components	Unit code updated to meet policy requirements	E
AUM2004B	Prepare and use/operate equipment, tools and/or machinery	AUMATK2002	Prepare, use and operate equipment, tools and machinery	Unit code and title updated to meet policy requirements	E
AUM2005B	Monitor and maintain continuous improvement of systems and processes	AUMFQM2001	Monitor and maintain continuous improvement of systems and processes	Unit code updated to meet policy requirements	E
AUM2006B	Monitor and maintain equipment, tools and machinery	AUMATK3003	Monitor and maintain equipment, tools and machinery	Unit code updated to meet policy requirements Recoded at level 3	E
AUM2007B	Manage personal workplace	AUMAMA2001	Manage personal workplace	Unit code updated to meet policy requirements	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
AUM2008B	Maintain effective workplace relationships	AUMAF2002	Maintain effective workplace relationships	Unit code updated to meet policy requirements	E
AUM2009B	Work effectively with others in teams	AUMAMA2002	Work effectively with others in teams	Unit code updated to meet policy requirements	E
AUM2901B	Develop and produce documentation and procedures	AUMATA2001	Develop and produce documentation and procedures	Unit code updated to meet policy requirements	E
AUM3003B	Document designs	AUMFTA3001	Document designs	Unit code updated to meet policy requirements	E
AUM3020A	Influence and lead work groups in an automotive manufacturing environment	AUMAMM3001	Influence and lead work groups in an automotive manufacturing environment	Unit code updated to meet policy requirements	E
AUM3021A	Sustain quality standards	AUMFQM3002	Sustain quality standards	Unit code updated to meet policy requirements	E
AUM3022A	Reduce cycle time in work processes	AUMFMM3001	Reduce cycle time in work processes	Unit code updated to meet policy requirements	E
AUM3023A	Reduce waste in work processes	AUMFMM3002	Reduce waste in work processes	Unit code updated to meet policy requirements	E
AUM3024A	Undertake	AUMFTM3001	Undertake	Unit code	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
	preliminary fault finding and machine reset		preliminary fault finding and machine reset	updated to meet policy requirements	
AUM3025A	Apply visual factory principles and practices to an automotive manufacturing environment	AUMFQM3003	Apply visual factory principles and practices to an automotive manufacturing environment	Unit code updated to meet policy requirements	E
AUM3026A	Maintain a safe automotive manufacturing work environment	AUMASM3001	Maintain a safe automotive manufacturing work environment	Unit code updated to meet policy requirements	E
AUM3401B	Plan and organise production	AUMFMM3003	Plan and organise production	Unit code updated to meet policy requirements	E
AUM4001A	Analyse a test vehicle for research purposes	AUMFTA4005	Analyse a test vehicle for research purposes	Unit code updated to meet policy requirements	E
AUM4002A	Provide technical advice	AUMATA4006	Provide technical advice	Unit code updated to meet policy requirements	E
AUM4004A	Use measuring equipment	AUMATK4004	Use measuring equipment	Unit code updated to meet policy requirements	E
AUM4005A	Use sensors to acquire motor vehicle data for development	AUMATR4002	Use sensors to acquire motor vehicle data for development	Unit code updated to meet policy requirements	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
	purposes		purposes		
AUM4006A	Calibrate measuring equipment in automotive development	AUMATK4005	Calibrate measuring equipment in automotive development	Unit code updated to meet policy requirements	E
AUM4007A	Test plant, tooling, equipment, product or systems	AUMATK4006	Test plant, tooling, equipment, product or systems	Unit code updated to meet policy requirements	E
AUM4008A	Install plant, equipment or systems	AUMATK4007	Install plant, equipment or systems	Unit code updated to meet policy requirements	E
AUM4009A	Maintain plant, tooling, equipment or systems	AUMATK4008	Maintain plant, tooling, equipment or systems	Unit code updated to meet policy requirements	E
AUM4010A	Repair plant, tooling, equipment or systems	AUMATK4009	Repair plant, tooling, equipment or systems	Unit code updated to meet policy requirements	E
AUM4011A	Manufacture or modify plant, tooling, equipment or systems	AUMATK4010	Manufacture or modify plant, tooling, equipment or systems	Unit code updated to meet policy requirements	E
AUM4012A	Apply quality assurance techniques	AUMAQA4001	Apply quality assurance techniques	Unit code updated to meet policy requirements	E
AUM4013A	Interpret manuals, drawings and/or circuits for plant, tooling, equipment	AUMATK4011	Interpret manuals, drawings and circuits for	Unit code and title updated to meet policy	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
	or systems		plant, tooling, equipment or systems	requirements	
AUM4014A	Program and monitor computerised equipment	AUMAKM4001	Program and monitor computerised equipment	Unit code updated to meet policy requirements	E
AUM5001A	Coordinate project activities	AUMAMA5004	Coordinate project activities	Unit code updated to meet policy requirements	E
AUM5002A	Establish a test/ trial for components of plant, tooling, equipment or systems	AUMFTK5001	Establish a test or trial for components of plant, tooling, equipment or systems	Unit code and title updated to meet policy requirements	E
AUM5003A	Create new product designs	AUMFTM5002	Create new product designs	Unit code updated to meet policy requirements	E
AUM5004A	Produce research reports	AUMFTA5006	Produce research reports	Unit code updated to meet policy requirements	E
AUM5005A	Develop conceptual models and prototypes	AUMFTM5003	Develop conceptual models and prototypes	Unit code updated to meet policy requirements	E
AUM5006A	Seek, evaluate, organise and prepare information	AUMFTA5007	Seek, evaluate, organise and prepare information	Unit code updated to meet policy requirements	E
AUM5301B	Produce drawings manually	AUMATA5008	Produce drawings	Unit code updated to meet policy	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
			manually	requirements	
AUM5403B	Produce computer-aided drawings (CAD)	AUMAKM5002	Produce computer-aided drawings	Unit code updated to meet policy requirements	E
AUM8001B	Contribute to workplace relationships and processes	AUMGMM3001	Contribute to workplace relationships and processes	Unit code updated to meet policy requirements	E
AUM8011B	Provide customer service	AUMGCA2001	Provide customer service	Unit code updated to meet policy requirements	E
AUM8012B	Prepare and document quotation	AUMANA3001	Prepare and document quotation	Unit code updated to meet policy requirements	E
AUM8013A	Participate in workplace productivity	AUMGMA3001	Participate in workplace productivity	Unit code updated to meet policy requirements	E
AUM8021B	Inspect work and apply organisation technical quality standards	AUMGQA3001	Inspect work and apply organisation technical quality standards	Unit code updated to meet policy requirements	E
AUM8032B	Control stock	AUMABM4001	Control stock	Unit code updated to meet policy requirements	E
AUM8041B	Prepare materials for fabrication using jigs/fixtures	AUMGTS3001	Prepare materials for fabrication using jigs and	Unit code and title updated to meet policy	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
			fixtures	requirements	
AUM8042B	Prepare materials for fabrication using manual processes	AUMGTS3002	Prepare materials for fabrication using manual processes	Unit code updated to meet policy requirements	E
AUM8043B	Read and interpret working drawings and work orders	AUMGTA2001	Read and interpret working drawings and work orders	Unit code updated to meet policy requirements	E
AUM8044B	Read and interpret engineering drawings and job specifications	AUMGTM3005	Read and interpret engineering drawings and job specifications	Unit code updated to meet policy requirements	E
AUM8051B	Conduct basic welding, thermal cutting, heating and gouging operations	AUMGTW3001	Conduct basic welding, thermal cutting, heating and gouging operations	Unit code updated to meet policy requirements	E
AUM8052B	Conduct mechanical cutting operations	AUMGTW3002	Conduct mechanical cutting operations	Unit code updated to meet policy requirements	E
AUM8053B	Perform manual metal arc welding operations (MMAW)	AUMGTW3003	Perform manual metal arc welding operations	Unit code updated to meet policy requirements	E
AUM8056B	Perform gas tungsten arc welding operations (GTAW)	AUMGTW3004	Perform gas tungsten arc welding operations	Unit code updated to meet policy requirements	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
AUM8057B	Perform gas metal arc welding operations (GMAW)	AUMGTW3005	Perform gas metal arc welding operations	Unit code updated to meet policy requirements	E
AUM8061B	Fabricate plugs	AUMGTS3003	Fabricate plugs	Unit code updated to meet policy requirements	E
AUM8062B	Stamp and press parts	AUMATS2001	Stamp and press parts	Unit code updated to meet policy requirements	E
AUM8063B	Fabricate parts for sub-assemblies	AUMGTS3004	Fabricate parts for sub-assemblies	Unit code updated to meet policy requirements	E
AUM8064B	Machine parts	AUMGTW3006	Machine parts	Unit code updated to meet policy requirements	E
AUM8071B	Finish surfaces for painting	AUMGTP3001	Finish surfaces for painting	Unit code updated to meet policy requirements	E
AUM8072B	Paint chassis or panels	AUMGTY3001	Paint chassis or panels	Unit code updated to meet policy requirements	E
AUM8074B	Rework paint faults	AUMGTP3002	Rework paint faults	Unit code updated to meet policy requirements	E
AUM8081B	Apply trim to components	AUMGTT2001	Apply trim to components	Unit code updated to meet policy	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
				requirements	
AUM8082B	Assemble components	AUMGTM2001	Assemble components	Unit code updated to meet policy requirements	E
AUM8083B	Assemble frame and axle	AUMGTM3002	Assemble frame and axle	Unit code updated to meet policy requirements	E
AUM8084B	Install engine and drive train	AUMFTQ3001	Install engine and drive train	Unit code updated to meet policy requirements	E
AUM8085B	Mount and install assembled component to chassis or frame	AUMGTY3002	Mount and install assembled component to chassis or frame	Unit code updated to meet policy requirements	E
AUM8086B	Service after assembly	AUMGTA3002	Service after assembly	Unit code updated to meet policy requirements	E
AUM8087B	Assemble and install hydraulic system kit	AUMGTM3006	Assemble and install hydraulic system kit	Unit code updated to meet policy requirements	E
AUM8088B	Assemble and install pneumatic system kit	AUMGTM3007	Assemble and install pneumatic system kit	Unit code updated to meet policy requirements	E
AUM8089B	Assemble and install braking system kit	AUMGTB3001	Assemble and install braking system kit	Unit code updated to meet policy requirements	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
AUM8090B	Install fixed and moveable glass components	AUMGTG3001	Install fixed and moveable glass components	Unit code updated to meet policy requirements	E
AUM8091B	Install or replace mechanical units/assemblies	AUMGTM3003	Install or replace mechanical units and assemblies	Unit code and title updated to meet policy requirements	E
AUM8092B	Install/fit out components	AUMGTM2004	Install and fit out components	Unit code and title updated to meet policy requirements	E
AUM8094B	Install or replace electrical / electronic units / assemblies	AUMGTR3001	Install or replace electrical and electronic units and assemblies	Unit code and title updated to meet policy requirements	E
AUM8095B	Perform wheel alignment operations	AUMGTD3001	Perform wheel alignment operations	Unit code updated to meet policy requirements	E
AUM8101B	Modify or rectify chassis/frame and associated components	AUMGTY3003	Modify or rectify chassis and frame and associated components	Unit code and title updated to meet policy requirements	E
AUM8102B	Manufacture or modify wiring harnesses	AUMGTR3002	Manufacture or modify wiring harnesses	Unit code updated to meet policy requirements	E
AUM8103B	Rectify/replace vehicle body panels and ancillary fittings	AUMGTN3001	Rectify and replace vehicle body panels and ancillary	Unit code and title updated to meet policy	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
			fittings	requirements	
AUM8104B	Bond/repair components using fibreglass reinforced plastic techniques	AUMGTM3008	Bond and repair components using fibreglass reinforced plastic techniques	Unit code and title updated to meet policy requirements	E
AUM8105B	Perform minor modifications/repairs to electrical circuits/systems	AUMGTR3003	Perform minor modifications and repairs to electrical circuits and systems	Unit code and title updated to meet policy requirements	E
AUM8111B	Perform forklift driving and lifting operations	AUMABA3001	Perform forklift driving and lifting operations	Unit code updated to meet policy requirements	E
AUM8112B	Operate load shifting equipment	AUMABA3002	Operate load shifting equipment	Unit code updated to meet policy requirements	E
AUM8121B	Conduct final inspections and functional tests	AUMATA3002	Conduct final inspections and functional tests	Unit code updated to meet policy requirements	E
AUM8122B	Conduct simulated or road performance test	AUMATA4007	Conduct simulated or road performance test	Unit code updated to meet policy requirements	E
AUM8123B	Conduct welding inspection	AUMATW4002	Conduct welding inspection	Unit code updated to meet policy requirements	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
AUM8141B	Prepare new product designs	AUMAMA4003	Prepare new product designs	Unit code updated to meet policy requirements	E
AUMNT3001B	Rectify faults in vehicle metal components	AUMATA3003	Rectify faults in vehicle metal components	Unit code updated to meet policy requirements	E
AUMNT3002B	Rectify paintwork	AUMATP3001	Rectify paintwork	Unit code updated to meet policy requirements	E
AUMNT3003B	Control paint line production processes	AUMATP3002	Control paint line production processes	Unit code updated to meet policy requirements	E
AUMNT3004B	Conduct engine hot test	AUMFTE3001	Conduct engine hot test	Unit code updated to meet policy requirements	E
AUMNT3005B	Rework production engines	AUMATE3001	Rework production engines	Unit code updated to meet policy requirements	E
AUMNT3006B	Rectify mechanical faults on assembled vehicles	AUMATA3004	Rectify mechanical faults on assembled vehicles	Unit code updated to meet policy requirements	E
AUMNT3007B	Rectify electrical faults on assembled vehicles	AUMATR3001	Rectify electrical faults on assembled vehicles	Unit code updated to meet policy requirements	E
AUMNT3008B	Rectify assembly faults in assembled	AUMATA3005	Rectify assembly faults	Unit code updated to	E

AUM08 v1.1 Unit code	AUM08 v1.1 Unit title	AUM12 v1 Unit code	AUM12 v1 Unit title	Comment in relation to AUM08 v1.1	E/N
	vehicles		in assembled vehicles	meet policy requirements	
AUMNT3009B	Conduct die coating	AUMFTA3002	Conduct die coating	Unit code updated to meet policy requirements	E
AUMNT3010B	Conduct structural rectification of vehicle bodies	AUMATN3001	Conduct structural rectification of vehicle bodies	Unit code updated to meet policy requirements	E
AUMNT3011B	Test welds ultrasonically	AUMATW3001	Test welds ultrasonically	Unit code updated to meet policy requirements	E
AUMNT3012B	Conduct tool setting	AUMFTA3003	Conduct tool setting	Unit code updated to meet policy requirements	E
AUMNT3013B	Monitor and maintain metals treatment plant operations	AUMFTA3004	Monitor and maintain metals treatment plant operations	Unit code updated to meet policy requirements	E

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), and Training Packages endorsed by the National Quality Council (NQC).

How are Training Packages developed?

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

How do Training Packages encourage flexibility?

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

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

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

Who can deliver and assess using Training Packages?

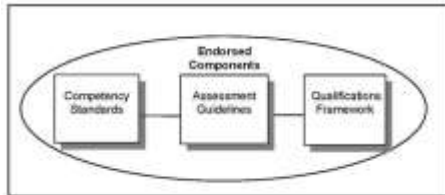
Training and assessment using Training Packages must be conducted by a Registered Training Organisation (RTO) that has the qualifications or specific units of competency on its scope of registration, or that works in partnership with another RTO, as specified in the AQTF 2010.

Training Package Components

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

Training Package Endorsed Components

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



Competency Standards

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

Assessment Guidelines

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

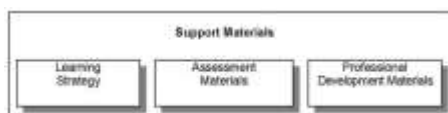
Qualifications Framework

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

Training Package Support Materials

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

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



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

Training Package, Qualification and Unit of Competency Codes

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

Training Package Codes

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

Qualification Codes

Within each Training Package, each qualification has a unique eight-character code, for example XYZ10108. Qualification codes are developed as follows:

- the first three letters identify the Training Package;
- the first number identifies the qualification level (noting that, in the qualification titles themselves, arabic numbers are **not** used);
- the next two numbers identify the position in the sequence of the qualification at that level; and
- 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 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 AUMATK1001 Select and use tools and equipment in an automotive manufacturing environment
- the first three characters signify the Training Package – AUM12 Automotive Manufacturing Training Package, the fourth character indicates the industry sector (i.e. A is common), the fifth and sixth character indicates the function or skill area (i.e. TK is technical tools and equipment). – 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.

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: AUM40112 Certificate IV in Automotive Manufacturing

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: AUMFTA4005 Analyse a test vehicle for research purposes

Introduction to the AUM12 Automotive Manufacturing Training Package

The revised AUM12 Automotive Manufacturing Training Package Version One has been developed to replace the AUM08 Automotive Manufacturing Training Package Version 1.1. This training package includes a complete review and restructure of all unit codes in the training package. There has been the need for some time to address the structure of all AUM12 unit codes as they are inconsistent in the use of AQF and competency field identifiers. The review of the qualifications in this training package also presented an ideal opportunity to rationalise competencies and apply a structured methodology to the coding of units of competency that aligns with current training package policy.

This Training Package is designed to meet the training and skills recognition needs of the Australian automotive manufacturing industry sector, including occupational areas covering:

- Passenger motor vehicles
- Bus, truck and trailers

This training package also provides access to the apprenticeship streams provided within current National Industry Competency Standards leading to national qualifications, with traineeship pathways also available. It also enables further career advancement beyond trade apprenticeship and technical traineeship, with progression to Diploma.

Introduction to the Industry

The automotive industry is one of Australia's key manufacturing sectors and an important source of employment and research and development. Australia is only one of thirteen countries with the capability to design, engineer and produce vehicles from beginning to end. The Australian vehicle market is also one of the most open and competitive in the world.

Australia's automotive industry is comprised of two very distinct sectors – the automotive manufacturing sector and the automotive retail, services and repair sector.

The manufacturing sector includes three motor vehicle manufacturers (Holden, Ford and Toyota) and three large truck manufacturers (IVECO, Kenworth and Volvo Commercial Vehicles) and more than 180 specialist component manufacturers. This sector of the industry is also a significant exporter of vehicles and components.

The Motor Vehicle and Motor Vehicle Parts Manufacturing sector consists of firms primarily engaged in the manufacture of motor vehicles (including bus, trucks vans), engines, vehicle bodies, trailers, electrical components and parts.

This sector employed 52,217 people in 2010-11, the majority of which are located in Victoria (28,823 persons) followed by South Australia (8,500).

AUM12 Version 1 - Review Process

Throughout the development and improvement of this training package there has been extensive consultation with the bus, truck and trailer and passenger motor vehicle industry sector advisory committees that comprised of industry stakeholder representatives.

Specifically the committees included:

- Andrew Morgan - GM Holden Ltd
- Brendon Patchett - AMWU
- David Smith - AMWU
- Denis Brown - GM Holden Ltd
- Geraldine Buchanan - Toyota Motor Corporation Australia
- John Kelly - Ford Motor Company of Australia
- Jon Gee - AMWU
- Ken Wearmouth - Ford Motor Company of Australia
- Mark Coupe - Futuris Automotive
- Martin Marran - PACCAR Australia
- Paul Whittington - Ford Motor Company of Australia
- Peter Smithard - Volvo Group Australia

- Rose Beth Pardoe - Ford Motor Company of Australia
- Scott Batchelor - AMWU
- Shane Welsh - Toyota Motor Corporation Australia

Throughout the process, consultation has occurred through this group, and meeting minutes, letters of support and 'sign off' for qualifications.

New Training Package Information

The revised AUM12 Automotive Manufacturing Training Package has been developed to replace the AUM08 Automotive Manufacturing Training Package.

This Training Package is designed to meet the training and skills recognition needs of the Australian automotive manufacturing industry sector. It covers the competencies used by people employed in the automotive manufacturing industry sector in two areas: Passenger Motor Vehicle and Bus, Truck and Trailer.

It also provides access to the apprenticeship streams provided within current National Industry Competency Standards leading to national qualifications, with traineeship pathways also available. It also enables further career advancement beyond trade apprenticeship and technical traineeship, with progression to Diploma. Qualifications were reviewed and revised to reflect contemporary automotive manufacturing job roles, provide career pathways, as well as simplification of some of the qualification titles.

The bank of units of competency has been revised and rationalised. Part of the revision included bringing all units to the current approved format. Further information has been added to each unit to assist users.

Key Features of AUM12 Training Package

AUM12 covers the Passenger Motor Vehicle and Bus, Truck and Trailer Sectors. The following is a brief overview of the training package.

The AUM12 Training Package represents the skill needs of the automotive manufacturing sector in Australia. As such, the qualification design represents the major sectors in the industry. The focus is on clarity of occupational outcomes with flexibility to allow for future variation in roles. The principles of the qualifications that were considered include:

flexibility and options relevant to the industry will be a key feature of all qualifications to allow for ongoing change – restrictive ‘rules’ will be kept to a minimum whilst maintaining rigour of occupational outcomes

specialisations and requirements to achieve the specialisations, will be nominated within relevant qualifications

nominated specialisations will be based on industry sector criteria, in particular, industry development objectives and skills shortages.

Rationalisation and the reduction of unnecessary duplication is a national priority, though there is currently no agreed national definition of rationalisation. Where units have been merged or amalgamated this has been done to achieve:

reduced duplication within and between training products

a cohesive and flexible set of national training products to meet the skill development needs of industry, the community and individuals.

Qualifications Framework

The Australian Qualifications 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 2010 Essential Standards for Initial and Continuing Registration*.

Statement of Attainment

A Statement of Attainment is issued by a Registered Training Organisation when an individual has completed one or more units of competency from nationally recognised qualification(s)/courses(s). Issuance of Statements of Attainment must comply with the advice provided in the current *AQF Implementation Handbook* and the *AQTF 2010 Essential Standards for Initial and Continuing Registration*.

Under the AQTF 2010, RTOs must recognise the achievement of competencies as recorded on a qualification or Statement of Attainment issued by other RTOs. Given this, recognised competencies can progressively build towards a full AQF qualification.

AQF Guidelines and Learning Outcomes

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

Certificate I

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and skills would prepare a person to perform a defined range of activities most of which may be routine and predictable.

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.

Certificate II

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and skills would prepare a person to perform in a range of varied activities or knowledge application where there is a clearly defined range of contexts in which the choice of actions required is usually clear and there is limited complexity in the range of operations to be applied.

Performance of a prescribed range of functions involving known routines and procedures and some accountability for the quality of outcomes.

Applications may include some complex or non-routine activities involving individual responsibility or autonomy and/or collaboration with others as part of a group or team.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

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

- assess and record information from varied sources;
- take limited responsibility for own outputs in work and learning.

Certificate III

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and competencies would cover selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.

Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the selection of equipment, services or contingency measures and within known time constraints.

Applications may involve some responsibility for others. Participation in teams including group or team co-ordination may be involved.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

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

Certificate IV

Characteristics of Learning Outcomes

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

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

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

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

Diploma

Characteristics of Learning Outcomes

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

The self directed application of knowledge and skills, with substantial depth in some areas where judgment 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 co-ordination may be involved.

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

Distinguishing Features of Learning Outcomes

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

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

Advanced Diploma

Characteristics of Learning Outcomes

Breadth, depth and complexity involving analysis, design, planning, execution and evaluation across a range of technical and/or management functions including development of new 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.

Vocational Graduate Certificate

Characteristics of competencies or learning outcomes

- The self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Substantial breadth and complexity involving the initiation, analysis, design, planning, execution and evaluation of technical and management functions in highly varied and highly specialised contexts.
- Applications involve making significant, high-level, independent judgements in major broad or planning, design, operational, technical and management functions in highly varied and specialised contexts. They may include responsibility and broad-ranging accountability for the structure, management and output of the work or functions of others.
- The degree of emphasis on breadth, as opposed to depth, of knowledge and skills may vary between qualifications granted at this level.

Distinguishing features of learning outcomes

- Demonstrate the self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Initiate, analyse, design, plan, execute and evaluate major broad or technical and management functions in highly varied and highly specialised contexts.
- Generate and evaluate 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 in complex contexts.
- Demonstrate responsibility and broad-ranging accountability for the structure, management and output of the work or functions of others.

Vocational Graduate Diploma

Characteristics of competencies or learning outcomes

- The self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Substantial breadth, depth and complexity involving the initiation, analysis, design, planning, execution and evaluation of major functions, both broad and highly specialised, in highly varied and highly specialised contexts.
- Further specialisation within a systematic and coherent body of knowledge.
- Applications involve making high-level, fully independent, complex judgements in broad planning, design, operational, technical and management functions in highly varied and highly specialised contexts. They may include full responsibility and accountability for all aspects of work and functions of others, including planning, budgeting and strategy development.
- The degree of emphasis on breadth, as opposed to depth, of knowledge and skills may vary between qualifications granted at this level.

Distinguishing features of learning outcomes

- Demonstrate the self-directed development and achievement of broad and highly specialised areas of knowledge and skills, building on prior knowledge and skills.
- Initiate, analyse, design, plan, execute and evaluate major functions, both broad and within highly varied and highly specialised contexts.
- Generate and evaluate complex ideas through the analysis of information and concepts at an abstract level.
- Demonstrate an expert command of wide-ranging, highly specialised, technical, creative or conceptual skills in complex and highly specialised or varied contexts.
- Demonstrate full responsibility and accountability for personal outputs.
- Demonstrate full responsibility and accountability for all aspects of the work or functions of others, including planning, budgeting and strategy.

Qualifications and Packaging Rules

AUM12 Qualifications

Qualification requirements from Certificate I to Diploma have been altered, in some cases significantly, however, more importantly, they allow for flexibility while the creation of descriptors within qualifications provide specialisation as appropriate.

While some variation occurs in numbers of units of competency across qualifications, occupational occupations align with the descriptions provided by the AQF at various levels.

VET in Schools

The delivery and assessment of competence under this package is seen as appropriately designed for VET in Schools and these programs are to be encouraged.

However, due to the requirement to demonstrate competence, it may be difficult for a school to assess and award qualifications within AUM12, except in close partnerships with other RTOs or organisations within the industry.

Transition Arrangements

Qualifications achieved from AUM08 will be recognised.

People who have attained units of competency from AUM08, should be granted equivalent units of competency in AUM12, hence, credit towards a full AUM12 qualification. A comprehensive mapping from AUM08 to AUM12 is included.

AUM12 Assessment Criteria

AUM12 has adopted the mandatory Assessment Guidelines, which provide the endorsed framework for assessment of units of competency in this Training Package. They are designed to ensure that assessment is consistent with the AQTF 2010. Assessments against units of competency in this Training Package must be carried out in accordance with these Assessment Guidelines.

Additional assessment advice is provided below with regard to simulated workplace environments. Some emphasis has been given to the establishment of partnerships in delivery and assessment to ensure satisfactory demonstration of workplace competence. This section provides an overview of the requirements for assessment when using the AUM12 Training Package, including a summary of the AQTF 2010 requirements, licensing/registration requirements, and assessment pathways.

Assessment in the Automotive Manufacturing Industry

The automotive manufacturing industry considers skills and knowledge demonstrated in a real workplace environment to be of great importance. While assessment of the units of competency in the AUM12 Training Package can be carried out in a simulated work environment, the industry strongly recommends that assessment of skills acquired is conducted under partnership arrangement in the workplace.

Assessment of competence requires the collection of evidence which should be conducted over a period of time. This assessment approach may include demonstration at the workplace and/or a simulated work environment to ensure that demonstration of competence is valid and reliable. The individual being assessed needs to be aware that the collection of evidence is ongoing and part of planning, conducting and reviewing the assessment process.

Simulated Work Environment

The AUM12 Training Package defines Simulated Work Environment as a model of convenience that is established to resemble the real thing which is for training purposes only.

Should it be necessary to conduct competency-based training and/or assessment in a simulated work environment and/or worksite, both the environment and/or worksite must resemble the real circumstances according to the task required to be assessed. These tasks should not be interpreted as being projects that are related to the off-the-job training outcomes rather than skills acquired within any given competency standard.

Units of competency from the AUM12 Training Package should wherever possible be assessed in a work environment. Where this is not possible assessment may occur in a simulated environment.

A simulated work environment may be required for the following reasons:

- the candidate may not have access to a workplace (e.g. Certificate I qualification, which is targeted at VET in Schools)
- the workplace may not use the relevant skill, equipment or process
- conducting assessments may be disruptive or interfere with work requirements, for example, there may be ethical, privacy or confidentiality issues to consider
- it may not be appropriate to apply the skills in the workplace due to potential risks, such as occupational health and safety (OHS) or equipment being damaged.

In order to be valid and reliable, the simulation must closely resemble what occurs in a real work environment. The simulated work environment should involve a range of activities that reflect real work experience.

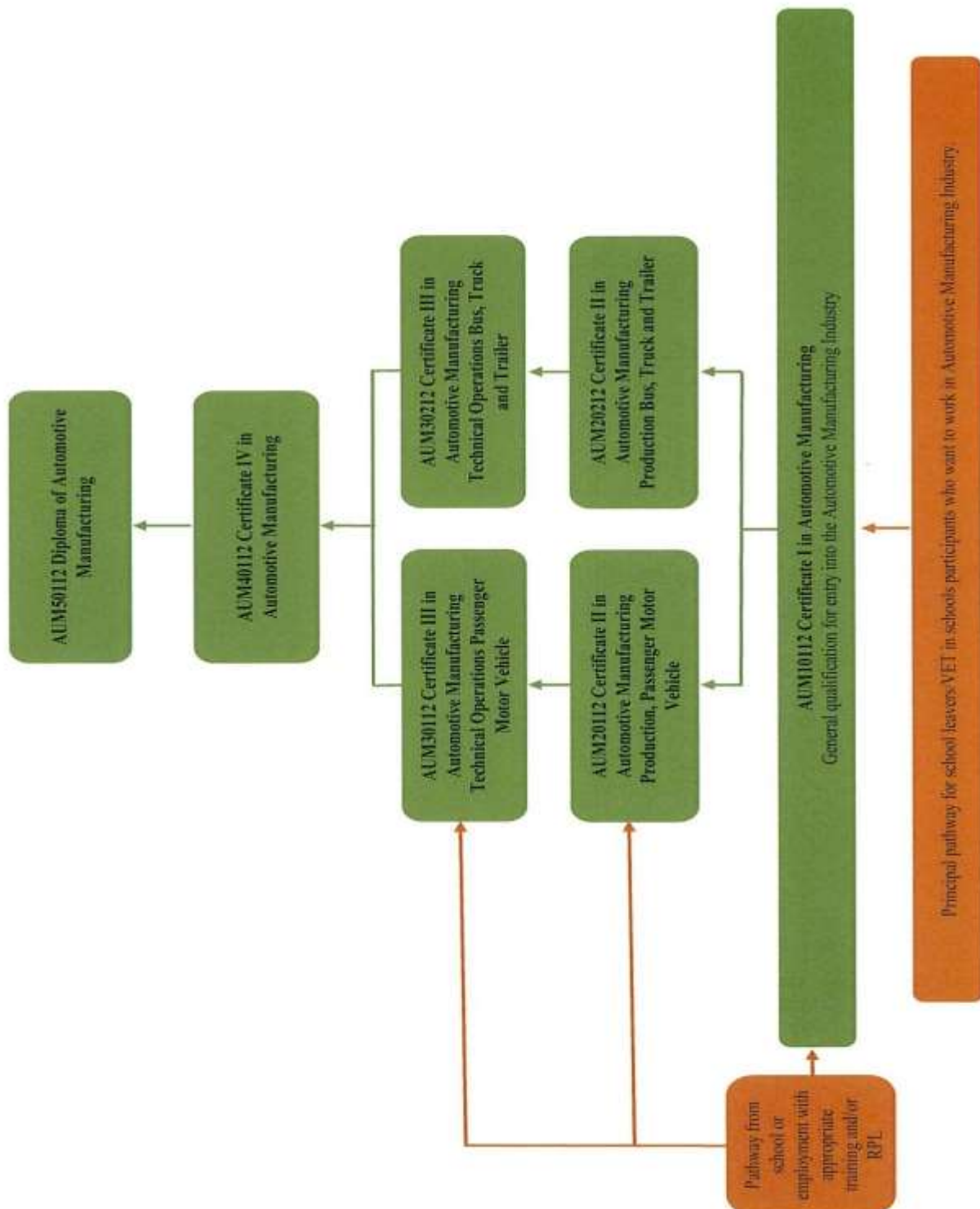
It is critical that when a simulated work environment is being set up that the assessor is thoroughly familiar with the units of competence as well as experienced in the current circumstances of the work.

In deciding whether a simulation or an assessment environment has been adequately set up, the following questions should be considered. Are there opportunities to:

- test the full range of equipment?
- use up to date equipment and software?
- reflect times and deadlines?
- show the complexity of dealing with multiple tasks?
- involve prioritising among competing tasks?
- deal with customers, including difficult ones?
- work with others in a team?
- communicate with diverse groups?
- find, discuss and test solutions to problems?
- explore health and safety issues?
- answer practically oriented, applied knowledge questions?
- show the level of written and verbal expression sufficient for the work requirements?

Qualification Pathways

The following pathways charts are provided to show the types of pathways into and from qualifications that are possible with this Training Package. For more information about qualifications and pathways contact Auto Skills Australia - info@autoskillsaustralia.com.au



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.

Wording on Statements of Attainment

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 2010 edition of the AQF Implementation Handbook for advice on wording on Statements of Attainment. http://www.aqf.edu.au/Portals/0/Documents/Handbook/AQF_Handbook_07.pdf

Skill Sets in this Training Package

This section provides information on Skill Sets within this Training Package, with the following important disclaimer: Readers should ensure that they have also read the part of the Training Package that outlines licensing and regulatory requirements.

Where this section is blank, nationally recognised Skill Sets have yet to be identified in this industry.

There are no Skill Sets in this Training Package.

Assessment Guidelines

Introduction

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

Assessment System Overview

This section provides an overview of the requirements for assessment when using this Training Package, including a summary of the AQTF requirements; licensing and registration requirements; and assessment pathways.

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

Benchmarks for Assessment

The endorsed units of competency in this Training Package are the benchmarks for assessment. As such, they provide the basis for nationally recognised Australian Qualifications Framework (AQF) qualifications and Statements of Attainment issued by Registered Training Organisations (RTOs).

Industry Requirements

Where necessary, Industry requirements additional to the Training Package Assessment Guidelines can be inserted here.

This may include advice on:

- the context in which assessment is conducted,
- industry workplace conditions and expectations,
- realistic simulated work environments that are acceptable to industry; and
- in general terms, of suitable/current resources and equipment.

[NOTE: where industry specific requirements are adequately covered by the Training Package Assessment Guidelines Mandatory Text, this section should be deleted.]

Principles of Assessment

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

- validity
- reliability
- flexibility
- fairness
- sufficiency

These principles must be addressed in the:

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

Validity

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

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

Reliability

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

Flexibility

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

Fairness

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

Sufficiency

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

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.

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.

Authentic

To accept evidence as authentic, an assessor must be assured that the evidence presented for assessment is the candidate's own work.

Assessment Requirements of the Australian Quality Training Framework

Assessment leading to nationally recognised AQF qualifications and Statements of Attainment in the vocational education and training sector must meet the requirements of the AQTF as expressed in the AQTF 2010 *Essential Standards for Registration*.

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

The following points summarise the assessment requirements.

Registration of Training Organisations

Assessment must be conducted by, or on behalf of, an RTO formally registered by a State or Territory Registering Body in accordance with the AQTF. The RTO must have the specific units of competency and/or AQF qualifications on its scope of registration.

Quality Training and Assessment

Each RTO must provide quality training and assessment across all its operations. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*, Standard 1.

Assessor Competency Requirements

Each person involved in training and assessment must be competent for the functions they perform. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*, Standard 1 for assessor (and trainer) competency requirements. See also the AQTF 2010 *Users' Guide to the Essential Standards for Registration* – Appendix 2.

Assessment Requirements

The RTOs assessments, including RPL, must meet the requirements of the relevant endorsed Training Package. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Assessment Strategies

Each RTO must have strategies for training and assessment that meet the requirements of the relevant Training Package or accredited course and are developed in consultation with industry stakeholders. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

National Recognition

Each RTO must recognise the AQF qualifications and Statements of Attainment issued by any other RTO. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*..

Access and Equity and Client Outcomes

Each RTO must adhere to the principles of access and equity and maximise outcomes for its clients. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Monitoring Assessments

Training and/or assessment provided on behalf of the RTO must be monitored to ensure that it is in accordance with all aspects of the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Recording Assessment Outcomes

Each RTO must manage records to ensure their accuracy and integrity. See the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

Issuing AQF qualifications and Statement of Attainment

Each RTO must issue AQF qualifications and Statements of Attainment that meet the requirements of the current *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 when an individual has completed one or more units of competency from nationally recognised qualification(s)/courses(s). See the AQTF and the edition of the *AQF Implementation Handbook*—available on the AQF Council 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.

The developers of this Training Package consider that no licensing or registration requirements apply to RTOs, assessors or candidates with respect to this Training Package. Contact the relevant State or Territory Department(s) to check if there are any licensing or registration requirements with which you must comply. For contact details of licensing authorities go to the following link:

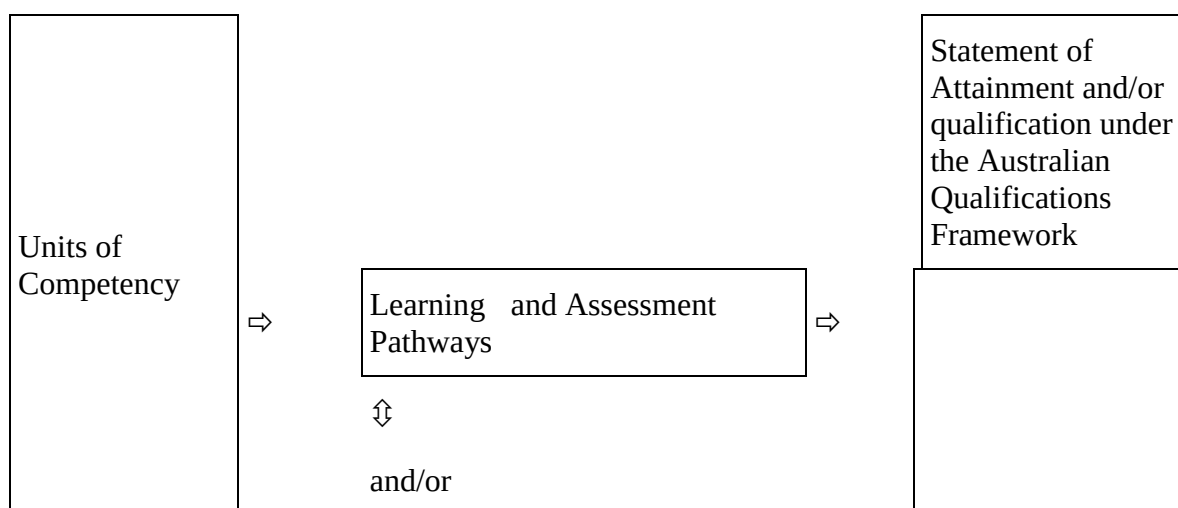
Licence Recognition (<http://www.licencerecognition.gov.au/authorities.aspx>)

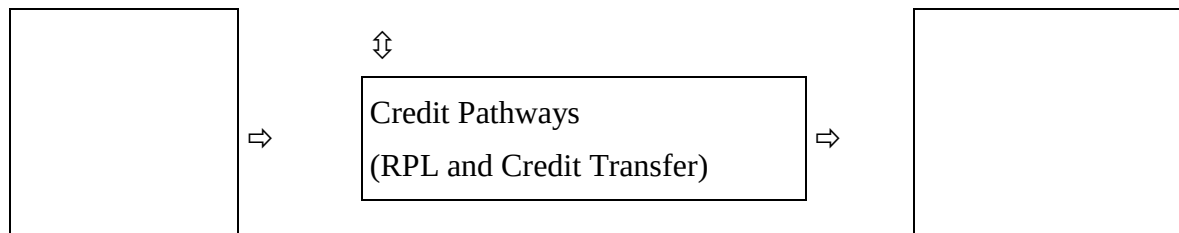
Pathways

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 this Training Package leading to an AQF qualification or Statement of Attainment may follow a learning and assessment pathway, or a recognition pathway, or a combination of the two as illustrated in the following diagram.





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, the AQTF and, where relevant, the Australian Qualifications Framework.

Learning and Assessment Pathways

Usually, learning and assessment are integrated, with evidence being collected and feedback provided to the candidate at anytime 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 structured 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.

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 units of competency in this Training Package, and should be recognised regardless of how, when or where they were acquired, provided that the learning is relevant to the unit of competency outcomes.

Recognition of Prior Learning

Recognition of Prior Learning (RPL) is an assessment process which determines the credit outcomes of an individual application for credit.

The availability of Recognition of Prior Learning (RPL) provides all potential learners with access to credit opportunities.

The recognition of prior learning pathway is appropriate for candidates who have previously attained skills and knowledge and who, when enrolling in qualifications, seek to shorten the duration of their training and either continue or commence working. This may include the following groups of people:

- existing workers;
- individuals with overseas qualifications;
- recent migrants with established work histories;
- people returning to the workplace; and
- people with disabilities or injuries requiring a change in career.
-

As with all assessment, RPL assessment should be undertaken by academic or teaching staff with expertise in the subject, content of skills area, as well as knowledge of and expertise in RPL assessment policies and procedures.

Assessment methods used for RPL should provide a range of ways for individuals to demonstrate that they have met the required outcomes and can be granted credit. These might include:

- questioning (oral or written)
- consideration of a portfolio and review of contents
- consideration of third party reports and/or other documentation such as documentation such as articles, reports, project material, papers, testimonials or other products prepared by the RPL applicant that relate to the learning outcomes of the relevant qualification component
- mapping of learning outcomes from prior formal or non-formal learning to the relevant qualification components
- observation of performance, and
- participation in structured assessment activities the individual would normally be required to undertake if they were enrolled in the qualification component/s.

In a Recognition of Prior Learning (RPL) pathway, the candidate provides current, quality evidence of their competency against the relevant unit of competency. This process may be directed by the candidate and verified by the assessor. Where the outcomes of this process indicate that the candidate is competent, structured training is not required. The RPL requirements of the AQTF must be met.

As with all assessment, the assessor must be confident that the evidence indicates that the candidate is currently competent against the endorsed unit of competency. This evidence may take a variety of forms and might include certification, references from past employers, testimonials from clients, work samples and/or observation of the candidate. The onus is on candidates to provide sufficient evidence to satisfy assessors that they currently hold the relevant competencies. In judging evidence, the assessor must ensure that the evidence of prior learning is:

- authentic (the candidate's own work);
- valid (directly related to the current version of the relevant endorsed unit of competency);
- reliable (shows that the candidate consistently meets the endorsed unit of competency);
- current (reflects the candidate's current capacity to perform the aspect of the work covered by the endorsed unit of competency); and
- sufficient (covers the full range of elements in the relevant unit of competency and addresses the four dimensions of competency, namely task skills, task management skills, contingency management skills, and job/role environment skills).

Credit Transfer

Credit transfer is a process which provides learners with agreed and consistent credit outcomes based on equivalences in content between matched qualifications.

This process involves education institutions:

- mapping, comparing and evaluating the extent to which the defined *learning outcomes and assessment requirements* of the individual *components of one qualification* are equivalent to the learning outcomes and assessment requirements of the individual components of another qualification
- making an educational judgment of the credit outcomes to be assigned between the matched components of the two qualifications
- setting out the agreed credit outcomes in a documented arrangement or agreement, and
- publicising the arrangement/agreement and credit available.

Combination of 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 pathways may be appropriate.

In such situations, the 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.

Assessor Requirements

This section identifies the specific requirements on the vocational competence and experience for assessors, to ensure that they meet the needs of industry and their obligations under AQTF, and clarifies how others may contribute to the assessment process where one person alone does not hold all the required competencies.

Assessor Competencies

The AQTF specifies mandatory competency requirements for assessors. For information, Element 1.4 from the AQTF 2007 *Essential Standards for Registration* follows:

- 1.4 Training and assessment are conducted by trainers and assessors who:
- a) have the necessary training and assessment competencies as determined by the National Quality Council or its successors, and
 - b) have the relevant vocational competencies at least to the level being delivered or assessed, and
 - c) can demonstrate current industry skills directly relevant to the training/assessment being undertaken, and
 - d) continue to develop their Vocational Education and Training (VET) knowledge and skills as well as their industry currency and trainer/assessor competence.
- * See AQTF 2010 *Users' Guide to the Essential Standards for Registration* – Appendix 2

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, or they may develop their own.

Using Prepared Assessment Tools

If using prepared assessment tools, assessors should ensure these relate to the current version of the relevant unit of competency. The current unit of competency can be checked on the National Register <www.ntis.gov.au>.

Developing Assessment Tools

When developing their own assessment tools, assessors must ensure that the tools:

- are benchmarked against the relevant unit or units of competency;
- are reviewed as part of the validation of assessment strategies required under the AQTF; and
- meet the assessment requirements expressed in the AQTF 2010 *Essential Standards for Initial and Continuing Registration*.

A key reference for assessors developing assessment tools is TAE10 Training and Education Training Package.

Language, Literacy and Numeracy

The design of assessment tools must reflect the language, literacy and numeracy competencies required for the performance of a task in the workplace and not exceed these expectations.

Conducting Assessment

This section details the mandatory assessment requirements and provides information on equity in assessment including reasonable adjustment.

Mandatory Assessment Requirements

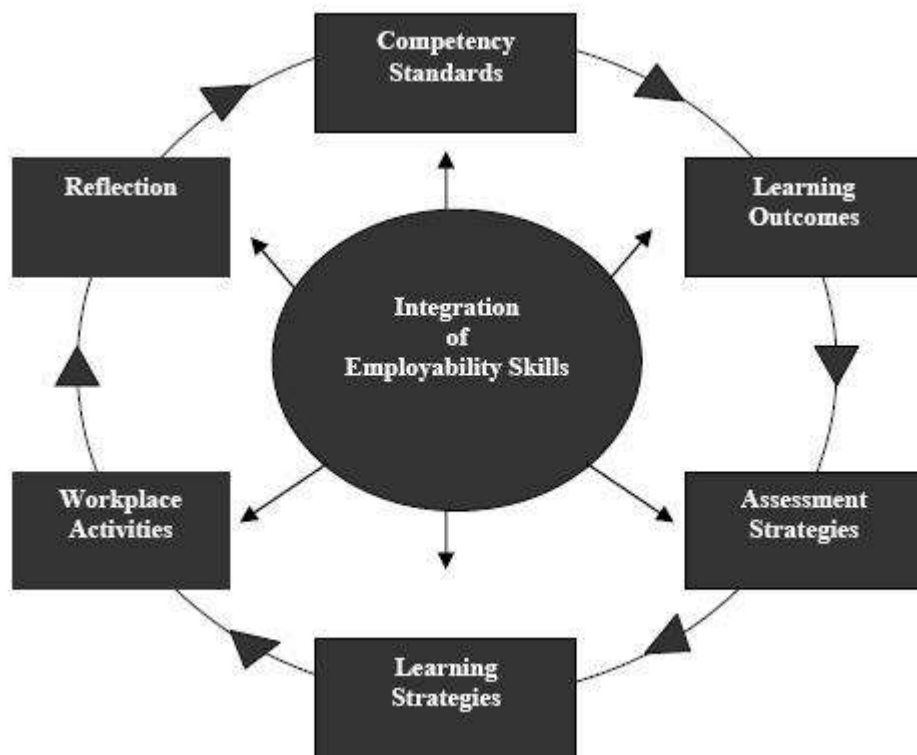
Assessments must meet the criteria set out in the AQTF 2010 *Essential Standards for Initial and Continuing Registration*. For information, the mandatory assessment requirements from Standard 1 from the AQTF 2010 *Essential Standards for Initial and Continuing Registration* are as follows:

1.5 Assessment, including Recognition of Prior Learning (RPL):

- a) meets the requirements of the relevant Training Package or accredited course
- b) is conducted in accordance with the principles of assessment and the rules of evidence
- c) meets workplace and, where relevant, regulatory requirements
- d) is systematically validated.

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 within each unit of competency, and an Employability Skills Summary is available for each qualification. 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.

The National Quality Council has endorsed a model for assessing and reporting Employability Skills, which contains further suggestions about good practice strategies in teaching, assessing, learning and reporting Employability Skills. The model is available from <http://www.training.com.au/>.

The endorsed approach includes learners downloading qualification specific Employability Skills Summaries for Training Package qualifications from an online repository at <<http://employabilityskills.training.com.au>>

For more information on Employability Skills in

Auto Skills Australia Training Packages go to the Auto Skills Australia website at [Auto Skills Australia Website](http://www.autoskillsaustralia.com.au) (<http://www.autoskillsaustralia.com.au>).

Employability Skills are reported on each qualification using the following statement on the qualification testamur: "A summary of the Employability Skills developed through this qualification can be downloaded from <http://employabilityskills.training.com.au> "

Access and Equity

An individual's access to the assessment process should not be adversely affected by restrictions placed on the location or context of assessment beyond the requirements specified in this Training Package: training and assessment must be bias-free.

Under the rules for their development, Training Packages must reflect and cater for the increasing diversity of Australia's VET clients and Australia's current and future workforce. The flexibilities offered by Training Packages should enhance opportunities and potential outcomes for all people so that we can all benefit from a wider national skills base and a shared contribution to Australia's economic development and social and cultural life.

Reasonable Adjustments

It is important that education providers take meaningful, transparent and reasonable steps to consult, consider and implement reasonable adjustments for students with disability.

Under the Disability Standards for Education 2005, education providers must make reasonable adjustments for people with disability to the maximum extent that those adjustments do not cause that provider unjustifiable hardship. While 'reasonable adjustment' and 'unjustifiable hardship' are different concepts and involve different considerations, they both seek to strike a balance between the interests of education providers and the interests of students with and without disability.

An adjustment is any measure or action that a student requires because of their disability, and which has the effect of assisting the student to access and participate in education and training on the same basis as students without a disability. An adjustment is reasonable if it achieves this purpose while taking into account factors such as the nature of the student's disability, the views of the student, the potential effect of the adjustment on the student and others who might be affected, and the costs and benefits of making the adjustment.

An education provider is also entitled to maintain the academic integrity of a course or program and to consider the requirements or components that are inherent or essential to its nature when assessing whether an adjustment is reasonable. There may be more than one adjustment that is reasonable in a given set of circumstances; education providers are required to make adjustments that are reasonable and that do not cause them unjustifiable hardship.

The Training Package Guidelines provides more information on reasonable adjustment, including examples of adjustments. Go to <http://www.deewr.gov.au/tpdh/Pages/home.aspx> .

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

Auto Skills Australia

Street Address:

Level 4, 533 Little Lonsdale Street

MELBOURNE VIC 3000

Postal Address:

PO Box 13295

LAW COURTS VIC 8010

Ph: +61 3 8610 2500

Fax: +61 3 8610 2550

Email: info@autoskillsaustralia.com.au info@autoskillsaustralia.com.au

Web: [Auto Skills Australia Website \(http://www.autoskillsaustralia.com.au\)](http://www.autoskillsaustralia.com.au)

Technical and Vocational Education and
Training (TVET) Australia Limited

Level 21, 390 St Kilda Road, Melbourne
VIC 3150

PO Box 12211, A'Beckett Street Post Office,
Melbourne, Victoria, 8006

Ph: +61 3 9832 8100

Fax: +61 3 9832 8198

Email: sales@tvetaustralia.com.au

Web: www.tvetaustralia.com.au

For information on the TAE10 Training and
Education Training Package contact:

Innovation & Business Skills Australia

Telephone: (03) 9815 7000

Facsimile: (03) 9815 7001

Email: virtual@ibsa.org.au

Web: www.ibsa.org.au

General Resources

AQF Implementation Handbook, Fourth Edition 2007. Australian Qualifications Framework Advisory Board, 2002 <www.aqf.edu.au>

Australian Quality Training Framework (AQTF) and AQTF 2010 Users' Guide to the Essential Standards for Registration –
<http://www.training.com.au/pages/menuitem5cbe14d51b49dd34b225261017a62dbc.aspx>

For general information and resources go to <http://www.training.com.au/>

The National Register is an electronic database providing comprehensive information about RTOs, Training Packages and accredited courses - <www.ntis.gov.au>

The Training Package Development Handbook site provides National Quality Council policy for the development of Training Packages. The site also provides guidance material for the application of that policy, and other useful information and links.
<http://www.deewr.gov.au/Skills/Overview/Policy/TPDH/Pages/main.aspx>

Assessment Resources

Registered training organisations (RTOs) are at the forefront of vocational education and training (VET) in Australia. They translate the needs of industry into relevant, quality, client-focussed training and assessment.

RTOs should strive for innovation in VET teaching and learning practices and develop highly flexible approaches to assessment which take cognisance of specific needs of learners, in order to improve delivery and outcomes of training.

Resources can be purchased or accessed from:

- TVET Australia – provides an integrated service to enable users of the national training system to identify and acquire training materials, identify copyright requirements and enter licenses for use of that material consistent with the scope and direction of the NQC.

<http://www.productservices.tvetaustralia.com.au/>

Competency Standards

What is competency?

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, 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.

Contextualisation of Units of Competency by RTOs

Registered Training Organisations (RTOs) may contextualise units of competency in this endorsed Training Package to reflect required local outcomes. Contextualisation 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 Training Package must be within the bounds of the following advice:

- RTOs must not remove or add to the number and content of elements and performance criteria.
- RTOs can include specific industry terminology in the range statement.
- Any amendments and additions to the range statement made by RTOs must not diminish the breadth of application of the competency, or reduce its portability.
- RTOs may add detail to the evidence guide in areas such as the critical aspects of evidence or required resources and infrastructure—but only where these expand the breadth of the competency and do not limit its use.

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 unit of competency. Each unit of competency title is unique, both within and across Training Packages.

Unit Descriptor

The unit descriptor broadly communicates the content of the unit of competency and the skill area it addresses. Where units of competency have been contextualised from units of competency from other endorsed Training Packages, summary information is provided. There may also be a brief second paragraph that describes its relationship with other units of competency, and any licensing requirements.

Employability Skills

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

Pre-requisite Units (optional)

If there are any units of competency that must be completed before the unit, these will be listed.

Application of the Unit

This sub-section fleshes out the unit of competency's scope, purpose and operation in different contexts, for example, by showing how it applies in the workplace.

Competency Field (Optional)

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

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 unit of competency. 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, 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 range statement, in the order of their appearance in the performance criteria.

Required Skills and Knowledge

The essential skills and knowledge are either 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.

Range Statement

The range statement provides a context for the unit of competency, describing essential operating conditions that may be present with training and assessment, depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts. As applicable, the meanings of key terms used in the performance criteria will also be explained in the range statement.

Evidence Guide

The evidence guide is critical in assessment as it provides information to the Registered Training Organisation (RTO) and assessor about how the described competency may be demonstrated. The evidence guide does this by providing a range of evidence for the assessor to make 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 units of competency;
- suitable methodologies for conducting assessment including the potential for workplace simulation;
- resource implications, for example access to particular equipment, infrastructure or situations;
- how consistency in performance can be assessed over time, various contexts and with a range of evidence; and
- the required underpinning knowledge and skills
-

Employability Skills in Units of Competency

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

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

How Employability Skills relate to the Key Competencies

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

Employability Skills Mayer Key Competencies

Communication	Communicating ideas and information
Teamwork	Working with others and in teams
Problem solving	Solving problems Using mathematical ideas and techniques
Initiative and enterprise	
Planning and organising	Collecting, analysing and organising information Planning and organising activities
Self-management	
Learning	
Technology	Using technology

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

Explicitly embedding Employability Skills in units of competency

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

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

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

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

Sample unit of competency components showing Employability Skills

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

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

Unit Title	Give formal presentations and take part in meetings (Communication)
Unit Descriptor	This unit covers the skills and knowledge required to promote the use and implementation of innovative work practices to effect change. (Initiative and enterprise)
Element	Proactively resolve issues. (problem solving)
Performance Criteria	Information is organised in a format suitable for analysis and dissemination in accordance with organisational requirements. (Planning and organising)
Range Statement	Software applications may include email, internet, word processing, spreadsheet, database or accounting packages. (technology)
Required Skills and Knowledge	Modify activities depending on differing workplace contexts, risk situations and environments. (Learning) Work collaboratively with others during a fire emergency. (teamwork) Instructions, procedures and other information relevant the maintenance of vessel and port security. (Communication)
Evidence Guide	Evidence of having worked constructively with a wide range of community groups and stakeholders to solve problems and adapt or design new solutions to meet identified needs in crime prevention. In particular, evidence must be obtained on the ability to: • assess response options to identified crime-prevention needs and determine the optimal action to be implemented • in consultation with relevant others, design an initiative to address identified issues. (Initiative and enterprise).

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.

AUM10112 Certificate I in Automotive Manufacturing

Modification History

AUM10112 Release 1 - replaces AUM10108 Certificate I in Automotive Manufacturing (Passenger Motor Vehicle)

Description

This qualification covers the skills and knowledge required to prepare for work in the automotive manufacturing industry. This may include undertaking a range of limited tasks under close supervision. The range of technical skills and knowledge is limited.

Pathways Information

Pathways into the qualification

This qualification may be accessed by direct entry.

Pathways from the qualification

Further training pathways from this qualification include AUM20112 Certificate II in Automotive Manufacturing Production – Passenger Motor Vehicle, AUM20212 Certificate II in Automotive Manufacturing Production – Bus, Truck and Trailer, or other relevant qualifications in the automotive industry.

Licensing/Regulatory Information

Licensing considerations

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

There are no entry requirements for this qualification.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

The following table contains a summary of the employability skills as identified by the automotive manufacturing industry for this qualification. The employability skills facets described here are

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

broad industry requirements that may vary depending on qualification packaging options.

Employability skill	Industry/enterprise requirements for this qualification include:
Communication	- gathering, conveying and receiving verbal and written information - listening and understanding workplace instructions - interpreting safety instructions and signage
Teamwork	working with colleagues and supervisors to contribute to work flow
Problem solving	- resolving simple maintenance issues with tools and equipment - solving routine problems related to hazards in the workplace while under direct supervision
Initiative and enterprise	raising environmental and occupational health and safety (OHS) issues with appropriate personnel
Planning and organising	planning own work schedule to ensure tasks are completed on time
Self-management	- behaving in ways that contribute to an effective and safe working environment - identifying own roles and responsibilities
Learning	- listening to ideas and opinions of other members of the team - following safety procedures
Technology	operating a range of tools and equipment

Packaging Rules

To achieve this qualification, competency must be demonstrated in **6 units** of competency, consisting of:

- 3 core units**

plus

- 3 elective units**, of which:
 - all elective units may be chosen from the elective units listed below
 - up to 1 unit may be drawn from a Certificate I or Certificate II qualification in this Training Package, 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 selected for this qualification

Core units

Unit code	Unit title
Common - Foundation and Employability Skills	
AUMAF1001	Manage personal career goals
Common - Technical - Tools and Equipment	
AUMATK1001	Select and use tools and equipment in an automotive manufacturing environment
Imported units	
MEM13014A	Apply principles of occupational health and safety in the work environment

Elective units

Unit code	Unit title
Common - Teamwork, Supervision and Management	
AUMAMA2001	Manage personal workplace
AUMAMA2002	Work effectively with others in teams
Imported units	
AURC172003A	Identify environmental regulations and best practice in a workplace or business
BSBCMM101A	Apply basic communication skills
MSAENV272B	Participate in environmentally sustainable work practices

Custom Content Section

Not applicable.

AUM20112 Certificate II in Automotive Manufacturing Production - Passenger Motor Vehicle

Modification History

AUM20112 Release 1 - replaces AUM20108 Certificate II in Automotive Manufacturing (Passenger Motor Vehicle).

Description

This qualification covers the skills and knowledge required to fulfil passenger vehicle production roles in the automotive manufacturing industry. This may include undertaking a range of limited supervisory tasks with accountability for the quality of outcomes. It is suitable for entry into the automotive manufacturing industry.

Job roles or employment outcomes

The Certificate II in Automotive Manufacturing Production – Passenger Motor Vehicle is intended to prepare new employees or recognise and develop existing workers who are involved in the manufacture of passenger motor vehicles.

Job roles related to this qualification may include:

- Product Assembler
- Vehicle Body Assembler
- Vehicle Production Worker
- Component Assembler
- Warehouse and Material Logistics

Application

This qualification is suitable for a Traineeship.

Pathways Information

Pathways into the qualification

This qualification may be accessed by direct entry.

Pathways from the qualification

Further training pathways from this qualification include AUM30112 Certificate III in Automotive Manufacturing Technical Operations – Passenger Motor Vehicle 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

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

The following table contains a summary of the employability skills as identified by automotive manufacturing 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	- gathering, conveying and receiving verbal and written information - listening and understanding workplace instructions
Teamwork	working with colleagues and supervisors to contribute to organisational goals
Problem solving	- resolving simple maintenance issues with equipment - solving routine problems related to hazards in the workplace while under direct supervision
Initiative and enterprise	- raising occupational health and safety (OHS) issues with the OHS officer - applying procedures and policies to work activities as appropriate
Planning and organising	planning and organising own work schedule to ensure tasks are completed on time
Self-management	- behaving in ways that contribute to an effective and safe working environment - identifying own roles and responsibilities
Learning	- listening to ideas and opinions of other members of the team - maintaining current knowledge of policies and procedures
Technology	operating a range of tools and equipment

Packaging Rules

To achieve this qualification, competency must be demonstrated in **9 units** of competency, consisting of:

- **6 core units**

plus

- **3 elective units**, of which:
 - all elective units may be chosen from the elective units listed below
 - up to 2 elective units may be chosen from a Certificate II qualification or above in this Training Package, 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 selected for this qualification

Core units

Unit code	Unit title
Common - Foundation and Employability Skills	
AUMAF2002	Maintain effective workplace relationships
Common - Teamwork, Supervision and Management	
AUMAMA2001	Manage personal workplace
AUMAMA2002	Work effectively with others in teams
Common - Health and Safety	
AUMASA2001	Monitor and maintain a safe workplace and environment
Common - Technical - Tools and Equipment	
AUMATK2002	Prepare, use and operate equipment, tools and machinery
Passenger Vehicle - Support and Logistics - Manufacture	
AUMFBM2001	Prepare and process materials and components

Elective units

Unit code	Unit title
Common - Technical - Tools and Equipment	

Unit code	Unit title
AUMATK3003	Monitor and maintain equipment, tools and machinery
Passenger Vehicle - Support and Logistics -Tools and Equipment	
AUMFBK2001	Receive and dispatch materials, equipment and tools
Passenger Vehicle - Quality - Manufacture	
AUMFQM2001	Monitor and maintain continuous improvement of systems and processes
Imported units	
AURC272003A	Apply environmental regulations and best practice in a workplace or business
MSACMC210A	Manage the impact of change on own work
MSACMS200A	Apply competitive manufacturing practices
MSACMS201A	Sustain process improvements
MSACMT240A	Apply 5S procedures in a manufacturing environment
MSACMT251A	Apply quality standards
MSACMT280A	Undertake root cause analysis
MSAENV272B	Participate in environmentally sustainable work practices

Custom Content Section

Not applicable.

AUM20212 Certificate II in Automotive Manufacturing Production - Bus, Truck and Trailer

Modification History

AUM20212 Release 1 - replaces AUM25108 Certificate II in Automotive Manufacturing (Bus, Truck and Trailer)

Description

This qualification covers the skills and knowledge required to perform a range of tasks in the manufacturing sector. The range of technical skills and knowledge is limited. It is suitable for entry into the automotive manufacturing industry.

Job roles or employment outcomes

The Certificate II in Automotive Manufacturing Production – Bus, Truck and Trailer is intended to prepare new employees or recognise and develop existing workers who are manufacturing components for vehicles.

Job roles related to this qualification may include:

- Automotive Body Builder
- Production Worker
- Component Assembler

Application

This qualification is suitable for entry into an Australian Apprenticeship pathway.

Pathways Information

Pathways into the qualification

This qualification may be accessed by direct entry.

Pathways from the qualification

Further training pathways from this qualification include AUM30212 Certificate III in Automotive Manufacturing Technical Operations – Bus, Truck and Trailer 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

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

The following table contains a summary of the employability skills as identified by the automotive manufacturing 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	- gathering, conveying and receiving verbal and written information - listening and understanding workplace instructions
Teamwork	working with colleagues and supervisors to contribute to organisational goals
Problem solving	- solving routine problems related to hazards in the workplace while under direct supervision - checking own work to ensure errors are minimal and work flow is maintained
Initiative and enterprise	- raising environmental and occupational health and safety (OHS) issues with appropriate personnel - recognise and respond to circumstances outside of personal competence
Planning and organising	- planning own work schedule to ensure tasks are completed on time - setting, monitoring and satisfying personal work goals
Self-management	- behaving in ways that contribute to an effective and safe working environment - identifying own roles and responsibilities
Learning	- listening to ideas and opinions of other members of the team - following safety procedures
Technology	operating a range of tools and equipment or specific machinery

Packaging Rules

To achieve this qualification, competency must be demonstrated in **14 units** of competency, consisting of:

- **7 core units**

plus

- **7 elective units**, of which:
 - all elective units may be chosen from the elective units listed below
 - up to 3 units may be chosen from a Certificate II qualification or above in this Training Package, 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 selected for this qualification

Core units

Unit code	Unit title
Common - Teamwork, Supervision and Management	
AUMAMA2002	Work effectively with others in teams
Common - Health and Safety	
AUMASA2001	Monitor and maintain a safe workplace and environment
Common - Technical - Tools and Equipment	
AUMATK2002	Prepare, use and operate equipment, tools and machinery
Bus, Truck and Trailer - Technical	
AUMGTA2001	Read and interpret working drawings and work orders
Bus, Truck and Trailer - Technical - Manufacture	
AUMGTM2001	Assemble components
Bus, Truck and Trailer - Technical - Welding, Grinding, Machining and Soldering	
AUMGTW3001	Conduct basic welding, thermal cutting, heating and gouging operations
AUMGTW3002	Conduct mechanical cutting operations

Elective units

Unit code	Unit title
Common - Teamwork, Supervision and Management	
AUMAMA2001	Manage personal workplace
Common - Technical - Tools and Equipment	
AUMATK3003	Monitor and maintain equipment, tools and machinery
Common - Technical - Fabrication	
AUMATS2001	Stamp and press parts
Passenger Vehicle - Support and Logistics - Manufacture	
AUMFBM2001	Prepare and process materials and components
Passenger Vehicle - Quality - Manufacture	
AUMFQM2001	Monitor and maintain continuous improvement of systems and processes
Bus, Truck and Trailer - Sales	
AUMGCA2001	Provide customer service
Bus, Truck and Trailer - Teamwork, Supervision and Management - Manufacture	
AUMGMM3001	Contribute to workplace relationships and processes
Bus, Truck and Trailer - Quality	
AUMGQA3001	Inspect work and apply organisation technical quality standards
Bus, Truck and Trailer - Technical - Glazing	
AUMGTG3001	Install fixed and moveable glass components
Bus, Truck and Trailer - Technical - Manufacture	
AUMGTM2004	Install and fit out components
AUMGTM3002	Assemble frame and axle
AUMGTM3003	Install or replace mechanical units and assemblies
Bus, Truck and Trailer - Technical - Paint	

Unit code	Unit title
AUMGTP3001	Finish surfaces for painting
Bus, Truck and Trailer - Technical - Electrical and Electronic	
AUMGTR3003	Perform minor modifications and repairs to electrical circuits and systems
Bus, Truck and Trailer - Technical - Fabrication	
AUMGTS3001	Prepare materials for fabrication using jigs and fixtures
AUMGTS3004	Fabricate parts for sub-assemblies
Bus, Truck and Trailer - Technical - Trimming and Upholstery	
AUMGTT2001	Apply trim to components
Bus, Truck and Trailer - Technical - Chassis and Frame	
AUMGTY3001	Paint chassis or panels
Imported units	
AURC251677A	Use numbers in the workplace
AURC272003A	Apply environmental regulations and best practice in a workplace or business
AURE224008A	Carry out soldering of electrical wiring/circuits
MSACMC210A	Manage the impact of change on own work
MSACMS200A	Apply competitive manufacturing practices
MSACMS201A	Sustain process improvements
MSACMT240A	Apply 5S procedures in a manufacturing environment
MSACMT251A	Apply quality standards
MSACMT280A	Undertake root cause analysis
TLID3036A	Lift and move load using a mobile crane

Custom Content Section

Not applicable.

AUM30112 Certificate III in Automotive Manufacturing Technical Operations - Passenger Motor Vehicle

Modification History

AUM30112 Release 1 - replaces AUM30108 Certificate III in Automotive Manufacturing - Manufacturing Specialist (Passenger Motor Vehicle)

Description

This qualification covers the skills and knowledge required to fulfil passenger vehicle production roles in the automotive manufacturing industry. This may include performing a range of supervisory or specialist roles such as quality specialist, process specialist, team leader or production supervisor. It is suitable for entry into the automotive manufacturing industry.

Job roles or employment outcomes

The Certificate III in Automotive Manufacturing, Technical Operations – Passenger Motor Vehicle is intended to prepare new employees or recognise and develop existing workers who are involved in the manufacture of passenger motor vehicles.

Job roles related to this qualification may include:

- Product/Component Assembler
- Vehicle Body Assembler
- Vehicle Production Worker
- Team Leader/Production Supervisor
- Quality Specialist
- Process Specialist

Application

This qualification is suitable for an Australian Traineeship pathway.

Pathways Information

Pathways into the qualification

This qualification may be accessed by direct entry. Pathways into this qualification would normally be from an AUM20112 Certificate II in Automotive Manufacturing Production – Passenger Motor Vehicle or other relevant qualifications.

Pathways from the qualification

Further training pathways from this qualification include AUM40112 Certificate IV in Automotive Manufacturing 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

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
The following table contains a summary of the employability skills as identified by the automotive manufacturing 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	- 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 - interpreting the needs of customers - reading and interpreting workplace related documentation
Teamwork	- 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	- recognising a workplace problem or a potential problem and taking action - determining problems needing priority action - referring problems outside area of responsibility to appropriate

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	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	• adapting to new and emerging situations in the workplace • being proactive and creative in responding to workplace problems, changes and challenges
Planning and organising	• planning own work requirements and prioritising actions to achieve required outcomes and to ensure tasks are completed on time • identifying risk factors and taking action to minimise risk
Self-management	• 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	• 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	• 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

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

- **6 core units**

plus

- **4 elective units** of which:
 - all elective units may be chosen from the elective units listed below
 - up to 2 elective units may be chosen from a Certificate II qualification or above in this Training Package, 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 selected for this qualification

Core units

Unit code	Unit title
Common - Health and Safety - Manufacture	
AUMASM3001	Maintain a safe automotive manufacturing work environment
Passenger Vehicle - Teamwork, Supervision and Management - Manufacture	
AUMFMM3001	Reduce cycle time in work processes
AUMFMM3002	Reduce waste in work processes
Passenger Vehicle - Quality - Manufacture	
AUMFQM3002	Sustain quality standards
Bus, Truck and Trailer - Teamwork, Supervision and Management - Manufacture	
AUMGMM3001	Contribute to workplace relationships and processes
Bus, Truck and Trailer - Quality	
AUMGQA3001	Inspect work and apply organisation technical quality standards

Elective units

Unit code	Unit title
Common - Teamwork, Supervision and Management - Manufacture	
AUMAMM3001	Influence and lead work groups in an automotive manufacturing environment
Common - Technical	

Unit code	Unit title
AUMATA3003	Rectify faults in vehicle metal components
AUMATA3004	Rectify mechanical faults on assembled vehicles
AUMATA3005	Rectify assembly faults in assembled vehicles
Common - Technical - Engines	
AUMATE3001	Rework production engines
Common - Technical - Body	
AUMATN3001	Conduct structural rectification of vehicle bodies
Common - Technical - Paint	
AUMATP3001	Rectify paintwork
AUMATP3002	Control paint line production processes
Common - Technical - Electrical and Electronic	
AUMATR3001	Rectify electrical faults on assembled vehicles
Common - Technical - Welding, Grinding, Machining and Soldering	
AUMATW3001	Test welds ultrasonically
Passenger Vehicle - Quality - Manufacture	
AUMFQM3003	Apply visual factory principles and practices to an automotive manufacturing environment
Passenger Vehicle - Technical	
AUMFTA3002	Conduct die coating
AUMFTA3003	Conduct tool setting
AUMFTA3004	Monitor and maintain metals treatment plant operations
Passenger Vehicle - Technical - Engines	
AUMFTE3001	Conduct engine hot test
Passenger Vehicle - Technical - Manufacture	

Unit code	Unit title
AUMFTM3001	Undertake preliminary fault finding and machine reset
Bus, Truck and Trailer - Teamwork, Supervision and Management	
AUMGMA3001	Participate in workplace productivity
Bus, Truck and Trailer - Technical - Manufacture	
AUMGTM3005	Read and interpret engineering drawings and job specifications
Imported units	
AURC272003A	Apply environmental regulations and best practice in a workplace or business
BSBCMN311B	Maintain workplace safety
BSBDIV301A	Work effectively with diversity
BSBINM301A	Organise workplace information
BSBINM302A	Utilise a knowledge management system
BSBINN301A	Promote innovation in a team environment
MSACMC210A	Manage the impact of change on own work
MSACMS200A	Apply competitive manufacturing practices
MSACMS201A	Sustain process improvements
MSACMT220A	Apply quick changeover procedures
MSACMT221A	Apply Just in Time (JIT) procedures
MSACMT230A	Apply cost factors to work practices
MSACMT231A	Interpret product costs in terms of customer requirements
MSACMT240A	Apply 5S procedures in a manufacturing environment
MSACMT482A	Assist in implementing a proactive maintenance strategy
MSAPMSUP390A	Use structured problem solving tools
MSL973001A	Perform basic tests

Unit code	Unit title
MSL973007A	Perform microscopic examination
TLIA3017A	Identify products and store to specifications
TLIA3023A	Coordinate stocktakes
TLIA4028A	Assess and monitor optimum stock levels

Custom Content Section

Not applicable.

AUM30212 Certificate III in Automotive Manufacturing Technical Operations - Bus, Truck and Trailer

Modification History

AUM30212 Release 1 - replaces AUM35108 Certificate III in Automotive Manufacturing (Bus, Truck and Trailer)

Description

This qualification covers the skills and knowledge required in the manufacture of automotive bodies. It is suitable for entry into the vehicle manufacturing bus, truck and trailer industry.

Job roles or employment outcomes

The Certificate III in Automotive Manufacturing Technical Operations – Bus, Truck and Trailer is intended to prepare new employees or recognise and develop existing workers who manufacture vehicles.

Job roles related to this qualification may include:

- Automotive Manufacturing Technician
- Vehicle Body Builder Technician
- Coach Builder Technician
- Sub Assembly Technician

Application

This qualification is suitable for an Australian Apprenticeship pathway.

Pathways Information

Pathways into the qualification

This qualification may be accessed by direct entry. Pathways into this qualification would normally be from AUM20212 Certificate II in Automotive Manufacturing Production – Bus, Truck and Trailer or other relevant qualifications.

Pathways from the qualification

Further training pathways from this qualification include AUM40112 Certificate IV in Automotive Manufacturing 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

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

The following table contains a summary of the employability skills as identified by the automotive manufacturing 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	• 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 • interpreting the needs of customers • reading and interpreting workplace related documentation
Teamwork	• 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	• recognising a workplace problem or a potential problem and taking 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

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

The following table contains a summary of the employability skills as identified by the automotive manufacturing 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:
	developing practical responses to common breakdowns in workplace systems and procedures
Initiative and enterprise	- adapting to new and emerging situations in the workplace - being proactive and creative in responding to workplace problems, changes and challenges
Planning and organising	- planning own work requirements and prioritising actions to achieve required outcomes and to ensure tasks are completed on time - identifying risk factors and taking action to minimise risk
Self-management	- 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	- 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	- 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

To achieve this qualification, competency must be demonstrated in **28 units** of competency, consisting of:

- **11 core units**

plus

- **17 elective units**, of which:
- all elective units may be chosen from the elective units listed below
 - up to 5 units may be chosen from a Certificate II qualification or above in this Training Package, 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 selected for this qualification.

Core units

Unit code	Unit title
Common - Health and Safety	
AUMASA2001	Monitor and maintain a safe workplace and environment
Common - Technical - Tools and Equipment	
AUMATK2002	Prepare, use and operate equipment, tools and machinery
AUMATK3003	Monitor and maintain equipment, tools and machinery
Bus, Truck and Trailer - Regulatory or Legal - Manufacture	
AUMGLM3001	Comply with heavy vehicle modification standards
Bus, Truck and Trailer - Teamwork, Supervision and Management - Manufacture	
AUMGMM3001	Contribute to workplace relationships and processes
Bus, Truck and Trailer - Quality	
AUMGQA3001	Inspect work and apply organisation technical quality standards
Bus, Truck and Trailer - Technical	
AUMGTA2001	Read and interpret working drawings and work orders
Bus, Truck and Trailer - Technical - Manufacture	
AUMGTM3005	Read and interpret engineering drawings and job specifications
Bus, Truck and Trailer - Technical - Welding, Grinding, Machining and Soldering	
AUMGTW3001	Conduct basic welding, thermal cutting, heating and gouging operations

Unit code	Unit title
AUMGTW3002	Conduct mechanical cutting operations
Imported units	
AURC270789A	Communicate effectively in the workplace

Elective units

Unit code	Unit title
Common - Support and Logistics	
AUMABA3002	Operate load shifting equipment
Bus, Truck and Trailer - Sales	
AUMGCA2001	Provide customer service
Bus, Truck and Trailer - Teamwork, Supervision and Management	
AUMGMA3001	Participate in workplace productivity
Bus, Truck and Trailer - Technical	
AUMGTA3002	Service after assembly
Bus, Truck and Trailer - Technical - Brakes	
AUMGTB3001	Assemble and install braking system kit
Bus, Truck and Trailer - Technical - Steering and Suspension	
AUMGTD3001	Perform wheel alignment operations
Bus, Truck and Trailer - Technical - Glazing	
AUMGTG3001	Install fixed and moveable glass components
Bus, Truck and Trailer - Technical - Manufacture	
AUMGTM2001	Assemble components
AUMGTM2004	Install and fit out components
AUMGTM3002	Assemble frame and axle

Unit code	Unit title
AUMGTM3003	Install or replace mechanical units and assemblies
AUMGTM3006	Assemble and install hydraulic system kit
AUMGTM3007	Assemble and install pneumatic system kit
AUMGTM3008	Bond and repair components using fibreglass reinforced plastic techniques
Bus, Truck and Trailer - Technical - Body	
AUMGTN3001	Rectify and replace vehicle body panels and ancillary fittings
Bus, Truck and Trailer - Technical - Paint	
AUMGTP3001	Finish surfaces for painting
AUMGTP3002	Rework paint faults
Bus, Truck and Trailer - Technical - Electrical and Electronic	
AUMGTR3001	Install or replace electrical and electronic units and assemblies
AUMGTR3002	Manufacture or modify wiring harnesses
AUMGTR3003	Perform minor modifications and repairs to electrical circuits and systems
Bus, Truck and Trailer - Technical - Fabrication	
AUMGTS3001	Prepare materials for fabrication using jigs and fixtures
AUMGTS3002	Prepare materials for fabrication using manual processes
AUMGTS3003	Fabricate plugs
AUMGTS3004	Fabricate parts for sub-assemblies
Bus, Truck and Trailer - Technical - Trimming and Upholstery	
AUMGTT2001	Apply trim to components
Bus, Truck and Trailer - Technical - Welding, Grinding, Machining and Soldering	
AUMGTW3003	Perform manual metal arc welding operations
AUMGTW3004	Perform gas tungsten arc welding operations

Unit code	Unit title
AUMGTW3005	Perform gas metal arc welding operations
AUMGTW3006	Machine parts
Bus, Truck and Trailer - Technical - Chassis and Frame	
AUMGTY3001	Paint chassis or panels
AUMGTY3002	Mount and install assembled component to chassis or frame
AUMGTY3003	Modify or rectify chassis and frame and associated components
Imported units	
AURC272003A	Apply environmental regulations and best practice in a workplace or business
AURT211170A	Inspect and service air braking systems
AURT216130A	Inspect suspension systems
AURT216170A	Inspect and service suspension systems
AURT311166A	Repair air braking systems
AURT411145A	Overhaul air braking systems/components
AURTH316166A	Repair suspension systems (heavy vehicle)
MSACMC210A	Manage the impact of change on own work
MSACMS200A	Apply competitive manufacturing practices
MSACMT280A	Undertake root cause analysis

Custom Content Section

Not applicable.

AUM40112 Certificate IV in Automotive Manufacturing

Modification History

AUM40112 Release 1 - replaces AUM40108 Certificate IV in Automotive Manufacturing - Automotive Development (Passenger Motor Vehicle) and AUM45108 Certificate IV in Automotive Manufacturing (Bus, Truck and Trailer)

Description

This qualification covers the skills and knowledge required to become a Lead Technician within the automotive manufacturing sector. This qualification is suitable for automotive manufacturing including passenger motor vehicle and bus, truck and trailer industries.

Job roles or employment outcomes

This qualification is a post-trade level qualification in the automotive manufacturing industry. It is designed for a Lead Technician covering a range of specialised functions.

Pathways Information

Pathways into the qualification

Preferred pathways for individuals entering this qualification are AUM30112 Certificate III in Automotive Manufacturing Technical Operations – Passenger Motor Vehicle, AUM30212 Certificate III in Automotive Manufacturing Technical Operations – Bus, Truck and Trailer or other relevant qualifications.

Pathways from the qualification

Further training pathways from this qualification include AUM50112 Diploma of Automotive Manufacturing 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

Those undertaking AUM40112 Certificate IV in Automotive Manufacturing are required to have AUMGQA3001 Inspect work and apply organisation technical quality standards, or be able to demonstrate equivalent competency.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

The following table contains a summary of the Employability Skills required by the automotive manufacturing 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	- gathering, conveying and receiving verbal and written information - communicating ideas and information to enable confirmation of work requirements and specifications
Teamwork	- working with colleagues to produce workplace documents - understanding dependencies in teams and using cooperative approaches
Problem solving	using checking techniques to anticipate problems and avoid interruptions to work flows or processes
Initiative and enterprise	- applying best practice work processes within the organisation - being proactive in overcoming work blockages
Planning and organising	planning and organising activities to ensure tasks are completed on time
Self-management	- behaving in ways that contribute to an effective and safe working environment - identifying own roles and responsibilities - satisfying competency requirements for the job
Learning	- listening to ideas and opinions of other members of the team - seeking learning opportunities
Technology	- operating a range of workplace technology related to tools, equipment and measuring devices - identifying and responding to equipment faults

Packaging Rules

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

- 3 core units**

plus

- 7 elective units**, of which:

- all units from either Group A or Group B

plus

- 4 elective units may be chosen from the elective units listed below
- up to 2 units may be drawn from a Certificate III qualification or above in this Training Package, 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 selected for this qualification

Core units

Unit code	Unit title
Common - Teamwork, Supervision and Management - Manufacture	
AUMAMM3001	Influence and lead work groups in an automotive manufacturing environment
Passenger Vehicle - Teamwork, Supervision and Management - Manufacture	
AUMFMM3003	Plan and organise production
Imported units	
MSACMT441A	Facilitate continuous improvement in manufacturing

Group A

Unit code	Unit title
Common - Quality	
AUMAQA4001	Apply quality assurance techniques
Common - Technical	
AUMATA3002	Conduct final inspections and functional tests
AUMATA4006	Provide technical advice

Group B

Unit code	Unit title	Pre-requisites

Unit code	Unit title	Pre-requisites
Imported units		
MSACMC411A	Lead a competitive manufacturing team	
MSACMT440A	Lead 5S in a manufacturing environment	
MSACMT453A	Use six sigma techniques	MSACMT452A

Elective units

Unit code	Unit title	Pre-requisites
Common - Support and Logistics - Manufacture		
AUMABM4001	Control stock	
Common - Technology (Computing) - Manufacture		
AUMAKM4001	Program and monitor computerised equipment	
AUMAKM5002	Produce computer-aided drawings	
Common - Teamwork, Supervision and Management		
AUMAMA4003	Prepare new product designs	
Common - Loss Assessment or Repair Quoting		
AUMANA3001	Prepare and document quotation	
Common - Health and Safety		
AUMASA2001	Monitor and maintain a safe workplace and environment	
Common - Technical		
AUMATA2001	Develop and produce documentation and procedures	
AUMATA4007	Conduct simulated or road performance test	
AUMATA5008	Produce drawings manually	
Common - Technical - Tools and Equipment		

Unit code	Unit title	Pre-requisites
AUMATK4004	Use measuring equipment	
AUMATK4005	Calibrate measuring equipment in automotive development	
AUMATK4006	Test plant, tooling, equipment, product or systems	
AUMATK4007	Install plant, equipment or systems	
AUMATK4008	Maintain plant, tooling, equipment or systems	
AUMATK4009	Repair plant, tooling, equipment or systems	
AUMATK4010	Manufacture or modify plant, tooling, equipment or systems	
AUMATK4011	Interpret manuals, drawings and circuits for plant, tooling, equipment or systems	
Common - Technical - Electrical and Electronic		
AUMATR4002	Use sensors to acquire motor vehicle data for development purposes	
Common - Technical - Welding, Grinding, Machining and Soldering		
AUMATW4002	Conduct welding inspection	
Passenger Vehicle - Technical		
AUMFTA3001	Document designs	
AUMFTA4005	Analyse a test vehicle for research purposes	
Imported units		
AURC472082A	Plan and manage compliance with environmental regulations in a workplace or business	
AURM441976B	Test engines using a dynamometer	
AURT466208A	Carry out diagnosis of complex system faults	
BSBLED401A	Develop teams and individuals	
BSBPMG403A	Apply cost management techniques	

Unit code	Unit title	Pre-requisites
BSBRKG304B	Maintain business records	
BSBRSK401A	Identify risk and apply risk management processes	
ICAICT103A	Use, communicate and search securely on the internet	
MSACMC210A	Manage the impact of change on own work	
MSACMS201A	Sustain process improvements	
MSACMS400A	Implement a competitive manufacturing system	
MSACMS401A	Ensure process improvements are sustained	
MSACMT220A	Apply quick changeover procedures	
MSACMT230A	Apply cost factors to work practices	
MSACMT231A	Interpret product costs in terms of customer requirements	
MSACMT250A	Monitor process capability	
MSACMT251A	Apply quality standards	
MSACMT260A	Use planning software systems in manufacturing	
MSACMT261A	Use SCADA systems in manufacturing	
MSACMT280A	Undertake root cause analysis	
MSACMT421A	Facilitate a Just In Time (JIT) system	
MSACMT430A	Improve cost factors in work practices	
MSACMT432A	Analyse manual handling processes	
MSACMT451A	Mistake proof a production process	
MSACMT452A	Apply statistics to processes in manufacturing	
MSACMT460A	Facilitate the use of planning software systems in manufacturing	MSACMT260A
MSAPMSUP390A	Use structured problem solving tools	
MSS404050A	Undertake process capability improvements	MSS404052

Unit code	Unit title	Pre-requisites
		A

Custom Content Section

Not applicable.

AUM50112 Diploma of Automotive Manufacturing

Modification History

AUM50112 Release 1 - replaces AUM50108 Diploma of Automotive Manufacturing - Automotive Development (Passenger Motor Vehicle)

Description

This qualification covers the skills and knowledge required to perform a range of specialist roles within the automotive manufacturing sector. This may involve undertaking a range of complex and non-routine tasks with substantial self-direction and judgement including leadership of others.

Job roles or employment outcomes

This qualification is a post-trade level qualification in the automotive manufacturing industry. It is designed for managers and supervisors covering a range of specialised functions in the automotive manufacturing sector.

Job roles related to this qualification may include:

- Line Manager
- Production Manager
- Supervisor

Pathways Information

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

Those undertaking AUM50112 Diploma of Automotive Manufacturing are required to have completed AUM40112 Certificate IV in Automotive Manufacturing, or be able to demonstrate equivalent competence.

Additional qualification advice

Training organisations are advised that in addition to the technical knowledge outlined in the relevant units of competency, any appropriate specialised technical knowledge should be included in any training plan.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

The following table contains a summary of the employability skills as identified by the automotive manufacturing 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	- conducting research to collect and analyse information in a range of reports - consulting with others to develop a range of plans and reports - liaising with stakeholders and promoting participative workplace arrangements - negotiating solutions to new and emerging issues
Teamwork	- contributing to the development of other team members - providing feedback on team performance to colleagues and managers
Problem solving	- applying risk management processes to business operations - assessing financial viability of new opportunities and matching organisational capability with market needs
Initiative and enterprise	- encouraging creative and innovative workplace solutions - identifying new and emerging opportunities for the business and developing strategies to capitalise on them - managing, fostering and facilitating change
Planning and organising	- developing systems that are flexible and responsive to changing circumstances - planning for contingencies and performance of staff and systems
Self-management	- dealing with contingencies - managing own time and priorities - taking responsibility as required by work role and ensuring all organisational policies and procedures are adhered to
Learning	assisting others to acquire new knowledge and skills to improve team and individual performance
Technology	- using electronic communication devices and processes, such as internet, intranet and email, to produce written correspondence and reports - using technology to assist the management of information and to assist the planning process

Packaging Rules

To achieve this qualification, competency must be demonstrated in **9 units** of competency, consisting of:

- **3 elective units** from Group A

plus

- **6 elective units** from Group B, of which:
 - all elective units may be chosen from the elective units listed in Group B below
 - up to 2 units may be drawn from a Certificate IV qualification or above in this Training Package, 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 selected for this qualification.

Elective units

Group A

Unit code	Unit title
Common - Teamwork, Supervision and Management	
AUMAMA5004	Coordinate project activities
Passenger Vehicle - Technical	
AUMFTA5006	Produce research reports
AUMFTA5007	Seek, evaluate, organise and prepare information
Passenger Vehicle - Technical - Tools and Equipment	
AUMFTK5001	Establish a test and trial for components of plant, tooling, equipment or systems
Passenger Vehicle - Technical - Manufacture	
AUMFTM5002	Create new product designs
AUMFTM5003	Develop conceptual models and prototypes

Group B

Unit code	Unit title

Unit code	Unit title
Imported units	
AURT570093A	Analyse and evaluate light vehicle steering and suspension system faults
AURT570193A	Analyse and evaluate light vehicle driveline system faults
AURT570293A	Analyse and evaluate light vehicle engine and fuel system faults
AURT570393A	Analyse and evaluate light vehicle braking system faults
AURT575093A	Analyse and evaluate electrical and electronic faults in stability/steering/suspension systems
AURT575193A	Analyse and evaluate electrical and electronic faults in electric over hydraulic systems
AURT575293A	Analyse and evaluate electrical and electronic faults in engine management systems
AURT575393A	Analyse and evaluate electrical and electronic faults in transmission/driveline systems
AURT575493A	Analyse and evaluate electrical and electronic faults in braking systems
AURT575593A	Analyse and evaluate electrical and electronic faults in safety systems
AURT575693A	Analyse and evaluate electrical and electronic faults in monitoring/protection systems
AURT575893A	Analyse and evaluate electrical and electronic faults in convenience and entertainment systems
AURT575993A	Analyse and evaluate electrical and electronic faults in theft deterrent systems
AURT576093A	Analyse and evaluate electrical and electronic faults in electric and hybrid vehicle systems
AURT576193A	Analyse and evaluate electrical and electronic faults in climate control systems
AURT576520A	Develop and apply electrical systems modification

Unit code	Unit title
AURT576620A	Develop and apply electronic systems modification
AURT577120A	Develop and apply gas fuel systems modification
AURT577520A	Prepare technical reports
BSBOHS501B	Participate in the coordination and maintenance of a systematic approach to managing OHS
BSBPMG501A	Manage application of project integrative processes
BSBPMG504A	Manage project costs
BSBPMG508A	Manage project risk
BSBWOR502B	Ensure team effectiveness
MSAENV472B	Implement and monitor environmentally sustainable work practices
MSAENV672B	Develop workplace policy and procedures for environmental sustainability
MSL924002A	Use laboratory application software

Custom Content Section

Not applicable.

AUMABA3001 Perform forklift driving and lifting operations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to inspect, test and operate a forklift truck safely and efficiently. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect and test forklift and its components	1.1. All activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. All inspection procedures are carried out using approved methods and equipment 1.3. Forklift inspected and tested for correct operation of all lift and tilt and fork functions 1.4. Forklift inspected and tested for correct function of brakes, steering, warning devices, safety features, fluid leaks and abnormal noises
2. Identify, assess and report faults	2.1. Faults are identified and isolated 2.2. All assessed faults are recorded, forwarded and reported to <i>appropriate personnel</i>
3. Perform forklift driving operations	3.1. Load characteristics are identified to ensure safe transportation 3.2. Forklift is operated without causing damage to any organisation property or vehicle sections, system or components 3.3. Forklift is driven correctly and safely according to licensing/legislation requirements
4. Perform forklift loading, moving and unloading procedures	4.1. Hazardous materials requiring lifting are identified and appropriate care/safety requirements applied 4.2. Forklift is operated correctly and safely in performing loading/ moving and unloading duties according to licensing/legislation requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to report identified faults to appropriate personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure the safe operation of forklift operations
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- inspection and testing procedures
- fork lift operation
- relevant technical information
- equipment/material safety handling requirements
- hazardous substances type and identification relevant to application
- loading/unloading/stacking procedures.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

EVIDENCE GUIDE	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • inspect and test the forklift and systems • document and report faults • demonstrate safe forklift operating techniques relevant to licensing/legislation requirements and including the following functions: loading, lifting, unloading, stacking, manoeuvring • demonstrate the appropriate use of hydraulic handling attachments, cables and slings • complete organisation documentation - written / electronic
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its

EVIDENCE GUIDE

	correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may

- clients and managers

RANGE STATEMENT

include:

- supervisors
- suppliers
- team leaders
- team members.

Unit Sector(s)

Unit sector	Support and Logistics

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMABA3002 Operate load shifting equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to select and use load shifting equipment. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Check load shifting equipment operation prior to use	1.1. All activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Operational checks are completed using approved methods and <i>equipment</i> in accordance with manufacturer specifications and organisation policies 1.3. Identified faults are reported
2. Lift and shift loads	2.1. Load characteristics and handling requirements are identified and appropriate shifting device is selected 2.2. Shift is completed using approved methods and equipment in accordance with organisation policies
3. Place loads	3.1. Loads are placed without causing damage to organisation property, machinery or equipment 3.2. Loads are placed in specified areas/positions using approved methods and equipment

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed loading and shifting tasks
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure loads are shifted and placed without causing damage to property and equipment

REQUIRED SKILLS AND KNOWLEDGE

- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- manual handling techniques
- hazardous substance types and identification
- hazardous substance handling requirements
- routine equipment operation and safety check procedures
- load shifting, manoeuvring and storage procedures relevant to application
- relevant operational information
- relevant manufacturer/organisation policies
- relevant equipment operation.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with

EVIDENCE GUIDE

	others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • interpret and communicate operational information • operate at least one type of load shifting equipment • employ OHS policy/legislation requirements • demonstrate safe working practices including: stacking and moving components and materials • complete organisation documentation requirements - written / electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Equipment may include:

- pallet trucks
- hand cranes
- blocks and tackles
- store travelling cranes
- trolley jacks.

Unit Sector(s)

Unit sector	Support and Logistics

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMABM4001 Control Stock

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to maintain stock levels in accordance with organisation policies and procedures. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a <i>specialist</i> level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Operate computer equipment	1.1. Computer equipment is selected to meet the job requirements stated in the organisation's stock control procedures and in line with <i>organisation requirements</i> 1.2. Computer equipment is operated to ensure records are monitored and maintained
2. Identify and record parts received, issued or dispatched	2.1. Parts are identified and matched by numbers, codes and location tags 2.2. Parts received, issued and dispatched are recorded with <i>appropriate documentation</i> to ensure stock is accurately accounted for 2.3. Parts received, issued or dispatched are keyed into the computer daily to ensure stock levels are accurately maintained
3. Deal appropriately with faulty or damaged parts	3.1. Faulty/damaged parts are assessed for rectification, returned to supplier or scraped according to organisation guidelines 3.2. Appropriate recording procedures are maintained
4. Maintain stock levels	4.1. Stocks are monitored and maintained 4.2. Reserve stocks are transferred from reserve locations to warehouse to ensure build line/customer requirements are met 4.3. Requisition/order forms are completed for identified stock maintenance requirements 4.4. Unavailable stock is recorded and reported to the <i>appropriate personnel</i> for action 4.5. Warehouse stocks are consolidated efficiently

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform appropriate personnel of unavailable stock
- apply teamwork to a range of situations, including the consolidation of warehouse stock
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure correct procedures are maintained concerning faulty or damaged parts
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- identification and characteristics of parts
- organisation ordering procedures
- types of computers and operating procedures
- identification of faulty parts
- stock control systems and organisation procedures
- knowledge of organisation OHS policy and procedures.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment

EVIDENCE GUIDE	
Guidelines for this Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • record parts and their details • operate computer equipment • conduct manual and/or stocktake • maintain documentation / computer records • detect stock discrepancies • identify and deal with faulty or damaged stock • apply organisation OHS policy and procedures • maintain an effective, clean and safe work site.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge

EVIDENCE GUIDE

	- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Organisation requirements</i> may include:	- access and equity principles and practices - environmental management (waste disposal, recycling and re-use guidelines) - emergency and evacuation procedures - equipment use procedures - ethical standards - legal obligations - maintenance and storage procedures - OHS requirements - organisational and site guidelines - policies and procedures relating to own role and responsibility - procedural manuals - quality assurance guidelines - quality and continuous improvement processes and standards - recording and reporting guidelines.
<i>Appropriate documentation</i> may include:	- invoices - delivery dockets - works order - order forms.
<i>Appropriate personnel</i> may	clients and managers

RANGE STATEMENT

include:

- supervisors
- suppliers
- team leaders
- team members.

Unit Sector(s)

Unit sector	Support and Logistics - Manufacture

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMAF1001 Manage personal career goals

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to apply for a job in the automotive manufacturing industry, including: undertaking an interview, attending a medical examination, and evaluating personal performance. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a high school level. They are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Gather and evaluate information on employment opportunities	1.1. Sources of information on employment opportunities are identified 1.2. Information on employment opportunities are <i>collected and evaluated</i> 1.3. Opportunities are reviewed and any further information required is obtained 1.4. Opportunities are clarified and graded to identify own preferences
2. Prepare and apply for a job	2.1. Preferred job application is <i>planned</i> 2.2. Self-appraisal is undertaken 2.3. Application for preferred opportunity is drafted
3. Prepare a resume	3.1. Content of the resume is identified and obtained 3.2. A resume using an <i>appropriate structure</i> is drafted 3.3. Appropriate <i>selection criteria</i> is checked and present in resume
4. Undertake a job interview as an applicant	4.1. Job <i>interview preparation</i> is conducted 4.2. Potential interview is rehearsed 4.3. Interview is undertaken and completed
5. Review and evaluate performance in a job interview	5.1. Feedback on performance in the interview is sought 5.2. Strengths and areas for improvement in the application and interview process are identified 5.3. Strategies for improvement in interview skills are identified and clarified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly to communicate with potential employers
- solve problems to maximise potential opportunities
- show initiative in adapting to changing employment opportunities or contexts
- access, interpret and apply information on relevant previous experiences
- manage time when planning, preparing and organising priorities
- gathering information from a range of sources
- take responsibility for organising own priorities.

Required knowledge

- application and resume formats
- interview techniques
- search techniques for available jobs.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for OHS
- gathering information from a range of sources
- using technology
- articulation of personal likes and dislikes, interests and goals
- demonstrating organisational specific knowledge
- personal presentation and communication skills
- application and resume formats
- having knowledge of structured work placement arrangements
- interview skills
- reviewing personal performance.

EVIDENCE GUIDE**Context of and specific resources for assessment**

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Collected and evaluated may include:

- taking into account own work preferences, skills and aptitudes, qualifications and experience and conditions of employment being offered.

Planned may include:

- researching the opportunity, choosing suitable modes of contact, planning the approach, making timely and appropriate telephone contact using clear and concise language, developing an understanding of the role and responsibilities and planning the writing of necessary material, interview rehearsals and the applications timely submission.

RANGE STATEMENT

<i>Appropriate structure</i> should reflect the:	job requirements and the level of detail of specific information required by the selection panel. It should include consideration of format, content, presentation, use of language and spelling and express the applicant's interest in the job and present the applicant as a valid candidate for the job.
<i>Selection criteria</i> may include:	the job specification needs to be addressed specifically in the resume to that readers are aware how the applicant sees themselves as being suitably qualified for the position.
<i>Interview preparation</i> may include:	sourcing accurate information on the organisation and position, clarifying the time and place of the interview, making sure personal presentation is appropriate for the occasion, anticipating probable questions and planning suitable answers.

Unit Sector(s)

Unit sector	Foundation and Employability Skills

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMFA2002 Maintain effective workplace relationships

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to work with others in the production process. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Give and receive instructions and messages as required by the job	1.1. Instructions and messages required for the job are received and acted upon 1.2. Instructions and messages received are confirmed with the person giving the message 1.3. Instructions and messages required for the job are delivered using the most appropriate <i>communication technique</i> and <i>format</i> which is understandable to the receiver/s 1.4. Feedback is sought from the person/s receiving the instructions or messages to ensure that they have been properly understood
2. Instruct and deliver training to others on-the-job as required	2.1. Objectives of the training are identified 2.2. Trainee is instructed in both the theory of and the practical applications for the job/role/tasks on either a one-on-one or small group basis in accordance with safety and job specifications, quality processes and environmental guidelines, using suitable <i>training techniques</i> 2.3. Trainee progress is monitored to ensure the training has been effective, and appropriate feedback is given
3. Follow organisation Diversity and Equal Opportunity policies and procedures	3.1. Workplace equal opportunity, diversity and related policies and procedures are identified and understood 3.2. Personnel responsible for receiving complaints about breaches of Workplace Equal Opportunity, Diversity and related policies are identified 3.3. Workplace equal opportunity, diversity and related policies are followed 3.4. Contract of Employment is identified and clarified with relevant personnel
4. Apply procedures and processes for resolving conflict in the workplace	4.1. Processes within the organisation for resolving conflict and grievances are identified 4.2. Processes within the organisation for resolving conflict and grievances are followed when required so that there is minimum disruption to production

ELEMENT	PERFORMANCE CRITERIA
5. Fill out forms as required by the job	5.1. Forms required for the job are identified 5.2. Forms required for the job are completed according to organisation procedures and legislative requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations
- solve problems particularly in teams paying attention to performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- format of common communication techniques, including memos, e-mails, telephone conventions
- common barriers to effective communication
- basic training and learning techniques
- organisation Diversity and Equal Opportunities policies and procedures
- range of organisation forms
- contract of Employment
- established communication channels and protocols
- problem identification and resolution techniques.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and established safe work practices and organisation policies and procedures for maintaining effective workplace relationships
- maintaining a working knowledge of current systems and practices related to diversity, equal opportunity and conflict resolution
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - giving and receiving instructions, information and messages
 - instructing and delivering job role/task training to individual trainee
 - following organisation diversity and equal opportunity policies and procedures
 - applying conflict resolution procedures and processes
 - filling out standard forms
- modify activities to cater for variations in organisation context and environment.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge

EVIDENCE GUIDE

	- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Communication technique</i> may include:	- face-to-face communication to individuals and groups - memos - sketches/diagrams - e-mail - telephone - use of non-verbal communication.
<i>Communication format</i> may include:	- computerised or hard copy order forms - work orders - accident/safety report forms - internal job application forms - suggestion form.
<i>Training techniques</i> may include:	- explanation - demonstration - computer-aided learning.

Unit Sector(s)

Unit sector	Foundation and Employability Skills

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMAKM4001 Program and monitor computerised equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to program and monitor computerised equipment with plant, tooling, equipment or systems required for the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Program computerised equipment	1.1. Applicable <i>organisation requirements</i> relevant to <i>program and monitor computerised equipment</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Electronic/microprocessor controlled equipment related to automotive development, final control modules or other computerised equipment are prepared for programming 1.4. Programmed electronic/microprocessor controlled equipment related to automotive development, final control modules or other computerised equipment is tested against job specifications
2. Step-through and monitor the operations of electronic/microprocessor controlled equipment	2.1. Electronic/microprocessor related to automotive development, final control modules or other computerised equipment controlled equipment is setup 2.2. Operations of the electronic/microprocessor controlled equipment related to automotive development, final control modules, or other computerised equipment are stepped-through and monitored 2.3. Any malfunctions of the electronic/microprocessor controlled equipment related to automotive development, final control modules, or other computerised equipment is identified and reported
3. Identify and diagnose fault conditions in electronic/microprocessor controlled equipment	3.1. Cause of malfunction in an electronic/microprocessor controlled equipment is diagnosed with the aid of fault-finding guides 3.2. A counter measure is proposed to rectify the malfunction
4. Rectify faults in electronic/microprocessor controlled	4.1. Identified malfunction of electronic/microprocessor controlled equipment is reported and/or rectified 4.2. Required counter measures are programmed into

ELEMENT	PERFORMANCE CRITERIA
equipment	computerised equipment 4.3. Revised program is tested, faults rectified and cleared for operational use
5. Document programming, monitoring and repairs to electronic/microprocessor controlled equipment.	5.1. Programming of the electronic/microprocessor controlled equipment is documented 5.2. Outcomes of the step-through and monitoring of operations of the electronic/microprocessor controlled equipment and any related fault rectification action are documented 5.3. Documentation on the outcomes of the step-through and monitoring of the operations of the electronic/microprocessor controlled equipment related to automotive development, and any related fault rectification action is stored and/or distributed to appropriate personnel 5.4. System/data/program is backed up where applicable

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to report malfunctions of electronic/microprocessor controlled equipment
- apply teamwork to a range of situations, including the programming of computerised equipment
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure appropriate systems, data and programs are backed up routinely
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- product development/engineering area involving the mechanical, electrical and fabrication

REQUIRED SKILLS AND KNOWLEDGE

functions

- evaluation techniques
- operation of systems and components
- operation and selection of computer hardware and software applications/systems
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- established communication channels and protocols
- interpreting and applying quality standards
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for programming and monitoring electronic/microprocessor controlled equipment related to automotive development, final control modules and other computerised equipment
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - using computers and computerised equipment
 - using displays in plant, tooling, equipment or systems
 - achieving work quality goals
- completing work area housekeeping requirements including the documentation of project activity and process outcomes.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process

EVIDENCE GUIDE	
	without undue disruption to the production process assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>Organisation requirements</i> may include:	- access and equity principles and practices - environmental management (waste disposal, recycling and re-use guidelines) - emergency and evacuation procedures - equipment use procedures - ethical standards - legal obligations - maintenance and storage procedures - OHS requirements - organisational and site guidelines - policies and procedures relating to own role and responsibility - procedural manuals

RANGE STATEMENT	
	- quality assurance guidelines - quality and continuous improvement processes and standards - recording and reporting guidelines.
<i>Program and monitor computerised equipment</i> may include:	- programming and monitoring electronic/ microprocessor controlled equipment related to automotive development - knowledge of final control modules and other computerised equipment in projects in the design - development - production of motor vehicles.
<i>Instructions</i> may include:	- workplace procedures relating to the use and operation of tools and equipment - departmental requirements - workplace instructions, including job sheets, plans, specifications, drawings and designs - workplace procedures relating to reporting and communications - manufacturers' instructions for the use of equipment and materials.

Unit Sector(s)

Unit sector	Technology (Computing) - Manufacture

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMAKM5002 Produce computer-aided drawings

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to produce drawings using computer aided drafting techniques, required in the design, development and production of bus/trucks/trailers. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Clarify computer-aided drawings (CAD) designer requirements	1.1. CAD project objectives are clarified and defined in accordance with <i>organisation requirements</i> 1.2. <i>Relevant parameters</i> are identified and interpreted 1.3. CAD requirements and processes are clarified based on consideration of project objectives and identified parameters
2. Select tools, equipment and computer hardware and software	2.1. Required computer hardware, software, tools, and equipment for the CAD project are selected and prepared in accordance with organisation procedures
3. Set up required CAD package	3.1. The required computer hardware for the CAD task is set up in accordance with manufacturer and organisation requirements 3.2. The CAD software package is installed in accordance with the software manufacturer instructions and statutory requirements 3.3. Files of digitised information relevant to the project are retrieved and converted if required
4. Gather object parameters and/or measurements	4.1. Any measurements of components, sub-assemblies, products, models, equipment, layouts or facilities needed for the preparation of the required drawings are made and recorded 4.2. Calculations of required dimensions and other drafting details based on measurements are made 4.3. <i>Critical information</i> relevant to the CAD project is identified
5. Prepare drawings	5.1. Critical dimensions and data for the required drawings are established 5.2. Preliminary sketches are prepared as required and reviewed with design, engineering, production and/or <i>appropriate personnel</i> 5.3. The CAD package is accessed using the necessary

ELEMENT	PERFORMANCE CRITERIA
	commands and protocol in accordance with the operating instructions of the CAD software manufacturer and organisation procedures 5.4. Peripheral equipment such as scanners, printers, plotters etc. are used as required 5.5. Complex 2D and 3D computer graphics systems are used where required 5.6. The CAD package is used to prepare drawings consistent with the project objectives and specifications
6. Check drawings and save drawing files	6.1. Drawings are checked against project objectives, specifications and organisation standards 6.2. CAD data files are stored in accordance with organisation procedures and archiving requirements
7. Plot drawings	7.1. Computer plotter is activated in accordance with applicable computer hardware and peripheral equipment protocols 7.2. Retrieved information is correctly plotted in accordance with software application package instructions and task requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to review preliminary sketches with appropriate personnel
- apply teamwork to a range of situations, including the gathering of object parameters and measurements
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure project objectives are defined in accordance with organisation requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation

REQUIRED SKILLS AND KNOWLEDGE

policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.

- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- processes to set up required CAD packages
- processes to gather object parameters and/or measurements
- processes to prepare CAD drawings
- processes to plot drawings.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in organisation context

EVIDENCE GUIDE

	and environment • clarify CAD requirements • select tools, equipment and computer hardware and software • set up required CAD package • gather object parameters and/or measurements • prepare drawings • check drawings • save electronic drawing files • plot drawings.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility

RANGE STATEMENT	
of the item, and local industry and regional contexts.	
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Relevant parameters may include:	• functional specifications • quality targets • materials • ergonomic considerations • documented standards • technical information • cost constraints • manufacturing processes.
Critical information may include:	• system accuracy • drafting standards • accepted tolerances.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.
2D and 3D computer graphics systems may include:	• file structures • menu utilisation • system library usage • data banking • archiving • file management and maintenance.

Unit Sector(s)

Unit sector	Technology (Computing) - Manufacture

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMAMA2001 Manage personal workplace

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to manage personal workplaces to achieve work production and quality goals. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and achieve work production goals	1.1. Procedural instructions for the job are obtained, interpreted and clarified, if necessary, with <i>appropriate personnel</i> 1.2. Relevant specifications for task outcomes are obtained, interpreted and clarified, if necessary, with appropriate personnel 1.3. Schedules and work plans are obtained, interpreted and clarified, if necessary, with appropriate personnel so that completion times and other requirements are identified 1.4. Procedural instructions, task specifications, schedules and work plans are effectively applied throughout work 1.5. Achievement of work production goals is reviewed and responded to by team members
2. Identify and achieve work quality goals	2.1. Quality instruction and procedures for the job are obtained, interpreted and clarified, if necessary, with appropriate personnel 2.2. <i>Quality performance indicators</i> are obtained, interpreted and clarified, if necessary, with appropriate personnel 2.3. Quality instructions and procedures are effectively applied throughout the work 2.4. Satisfaction of quality performance indicators is continuously monitored and variations responded to promptly 2.5. Achievement of quality goals is reviewed and recommendations for changes/improvements are discussed and developed
3. Respond flexibly to changed work requirements	3.1. The need and reason for <i>changes in work requirements</i> are clarified with appropriate personnel 3.2. Changes in schedules and work requirements are recognised, acknowledged and responded to positively when they occur

ELEMENT	PERFORMANCE CRITERIA
	3.3.Changed requirements are responded to, in accordance with organisation procedures, to meet objectives and task requirements 3.4.Outcomes are compared with planned objectives, tasks, instructions, specifications and task requirements
4. Contribute to cost reduction initiatives	4.1.Measures to control and/or minimise costs in the work area are identified and clarified with the appropriate personnel 4.2.Cost performance indicators and related work processes are identified, interpreted and clarified 4.3.Cost aspects of processes are applied and/or monitored throughout the work 4.4.Achievement of cost reduction targets is reviewed in conjunction with the team/works leader and the targets are continued/modified as necessary
5. Predict and recognise problems and take appropriate action	5.1.Problems which will have an impact on work plans are predicted if possible, and recognised when they occur 5.2.Action is taken to adjust work plans when changes to schedules occur and the action is promptly reported

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly to communicate with colleagues to maintain work production goals
- apply teamwork to a range of situations
- solve problems, particularly in teams paying attention to performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- problem identification and resolution techniques
- take responsibility for organising own work priorities.

Required knowledge

- environmental regulations and organisation policies and procedures needed to carry out work

REQUIRED SKILLS AND KNOWLEDGE

in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation

- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- organisation cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in organisation context and environment.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process

EVIDENCE GUIDE

	without undue disruption to the production process assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment must take place in accordance with the endorsed <i>Assessment Guidelines for the Automotive Industry</i> - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Appropriate personnel</i> may include:	- supervisors - team members - team leaders - suppliers - clients and managers.
<i>Quality performance indicators</i> may include:	- those established within each organisation quality system and may include identification - minimisation and elimination of defects - product/component specifications, tolerances - inspection systems

RANGE STATEMENT	
	• packaging specifications • non-conforming parts or products.
Changes in work requirements may result from variations in:	• process change • line speed • interruptions to parts supply/quality and personnel absences.
Cost performance indicators may include:	• cost benchmarks • waste avoidance • power conservation • productivity achievement • continuous improvement levels.

Unit Sector(s)

Unit sector	Teamwork, Supervision and Management

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMAMA2002 Work effectively with others in teams

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to work effectively as part of a team, in accordance with agreed team ground rules, within the Automotive Manufacturing industry. Teams may be work groups or other teams required to meet organisation needs. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Contribute to team operations	1.1. Agreed <i>team ground-rules</i> are accepted as the basis for operations 1.2. Team decision-making processes are identified and aligned with <i>enterprise requirements and procedures</i> 1.3. Active participation in the team decision-making process is demonstrated 1.4. Reporting relationships within and beyond the team are identified 1.5. Actions which show consideration for the needs of others and the effect of one's behaviour on others is demonstrated
2. Participate in teams to achieve production targets	2.1. Role of team and roles and responsibilities of members in relation to production targets are identified 2.2. Contributions are made to structure team tasks in the organisation 2.3. Participation in a team to help it achieve its production targets is demonstrated 2.4. Effectiveness is maintained when changes in the team occur or when working in different teams or environments
3. Participate in addressing team's key production indicators	3.1. The team's key production indicators are identified 3.2. Participation in meeting team's key production indicators is demonstrated
4. Participate in team meetings	4.1. Procedures for team meetings are identified 4.2. Proposed agenda items are passed to the meeting organiser 4.3. Team meetings are attended in accordance with notices/schedules 4.4. Contributions to team meetings are constructive and follow standard meeting procedures 4.5. Issues requiring personal follow-up or further consideration are actioned

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- fundamentals of team structures and dynamics
- causes of conflict and dysfunctional work groups
- basic conflict resolution
- diversity and equity policy and procedures
- basic decision making processes
- established communication channels and protocols
- problem identification and resolution.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

EVIDENCE GUIDE**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for working effectively with others in teams
- maintaining a working knowledge of current organisation team/work group arrangements, structures and processes
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - contributing to team/work group based operations through
 - participation in the organisation of the team/work group
 - participation in team/work group decision making
 - observing reporting relationships
 - showing consideration for other team/work group members
 - participating in the team/work groups pursuit of production targets
 - participating in the setting and achievement of the team/work groups key production indicators
 - effectively participating in team/work group meetings
- modify activities to cater for variations in organisation context and environment.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions

EVIDENCE GUIDE

	(real or simulated) and require evidence of process assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Team ground-rules may include:

- rules by which a team functions within a formal organisation setting
- ensure smooth functioning and cover how team members will relate to each other and how the team will achieve outputs
- communication
- task assignment
- goal setting
- problem solving
- decision making and general team/work planning

Enterprise requirements and procedures may include but not be limited to:

- legal
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- quality assurance
- procedural manuals
- quality and continuous improvement processes and standards
- OHS
- emergency and evacuation
- ethical standards
- recording and reporting
- access and equity principles and practices
- equipment use
- maintenance and storage
- environmental management (waste disposal, recycling and re-use guidelines)
- suppliers' operating instructions.

Unit Sector(s)

Unit sector	Teamwork, Supervision and Management - Not Assigned

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMAMA4003 Prepare new product designs

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to assist professional and other staff in the planning and design of new products or sub-assemblies. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Establish design requirements	1.1. Information on customer needs, competitor products, organisation objectives, fashion trends, safety needs, relevant <i>legislative</i> and <i>organisation requirements</i> is gathered 1.2. Information gathered is analysed to develop key requirements needed in new designs 1.3. Requirement of new design is documented in accordance with organisation procedures
2. Identify constraints	2.1. Constraints on design concepts (such as market price or size, production capability, product complexity) are identified and documented 2.2. Suitable strategies are developed to address identified constraints on designs
3. Create design concept	3.1. An initial design concept based on identified design requirements and constraints is created 3.2. Function, physical requirements and impact of the design concept are reviewed in consultation with <i>appropriate personnel</i> 3.3. Modifications to the initial design concept are made in accordance with feedback provided by engineering and marketing and other appropriate personnel
4. Produce concept sketches	4.1. Sketches are prepared to illustrate and explain proposed design concept(s) 4.2. Concept sketches are reviewed in consultation with engineering, marketing and other appropriate personnel and suitable changes made in accordance with a critical evaluation of the proposed design
5. Quantify design concept	5.1. Critical dimensions and data of a design concept are identified and quantified 5.2. Drawings are prepared to required accuracy to enable suitable manufacturing methods to be identified and evaluated 5.3. Estimates of required materials, components and related

ELEMENT	PERFORMANCE CRITERIA
	costs are calculated in conjunction with engineering, marketing and other appropriate personnel
6. Determine suitable production methods, materials and processes	6.1. Components and sub-assemblies are drawn in accordance with the design requirements 6.2. Suitable manufacturing methods are identified for the production of components and sub assemblies 6.3. Identified manufacturing methods for components and sub-assemblies are evaluated in conjunction with production engineering staff 6.4. Suitable assembly and finishing methods for the proposed product design are identified and evaluated
7. Evaluate feasibility	7.1. The proposed design and manufacturing processes are evaluated against the design requirements in conjunction with design, engineering, marketing and other appropriate personnel 7.2. Suitable trials and tests of the design are devised and conducted
8. Modify design	8.1. The product design is suitably modified, based on the outcomes of the feasibility evaluations and trials 8.2. Further tests are conducted to confirm the suitability of the modified design against the identified design requirements 8.3. The outcomes of the modification and testing of the new design concept are documented in accordance with organisation requirements
9. Complete documentation	9.1. The design of the new product is documented in accordance with organisation requirements 9.2. The design documentation is processed for approval 9.3. The design documentation is stored and distributed in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate identified and potential constraints in the design process to appropriate personnel

REQUIRED SKILLS AND KNOWLEDGE

- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure the product produced meets all relevant legislative and safety requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- planning the processes for development of new products/sub-assemblies
- read and interpret drawing symbols
- design principles, processes and constraints
- product evaluation procedures
- design documentation requirements
- interpretation and application of ADRs, State legislation, ASA and other codes.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards,

EVIDENCE GUIDE

required to demonstrate competency in this unit	codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • establish and quantify design requirements • determine suitable production methods, materials and processes • identify design constraints • produce concept sketches and evaluate feasibility • modify and document designs - paper based / electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements and procedures may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and organisation agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Unit Sector(s)

Unit sector	Teamwork, Supervision and Management

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMAMA5004 Coordinate project activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to coordinate project activities within a broader project. It may include coordination of resources in meeting project timelines and performance outcomes. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop project understanding	1.1. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks so as to effectively <i>coordinate the project activities</i> 1.2. The project plan is reviewed with the <i>project leader</i> to identify the required outcomes 1.3. Project requirements including, timelines, budget and project risk management plans are clarified and understood 1.4. Resource requirements are identified and tasks allocated to <i>team members</i>
2. Implement project	2.1. Agreed project scope procedures and processes are implemented 2.2. Progress is recorded and reported in accordance with organisational procedures and requirements
3. Monitor and coordinate project integration	3.1. Team members are supported to ensure that the outcomes of project activities and timelines are met 3.2. Recordkeeping systems are monitored to ensure that they are maintained by the team members 3.3. The passage of information is, in consultation with the team leader, coordinated throughout the team to ensure integration of effort
4. Coordinate project follow-up activities	4.1. Project activity outcomes and processes are reviewed in consultation with <i>stakeholders</i>, against the project plan and scope 4.2. The delivery of project activity reports is monitored to ensure that reports are complete and provide integrated responses 4.3. The project leader is assisted in assembling data and issues for the project final report

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to allocate tasks to team members
- apply teamwork to a range of situations, particularly the meeting of timelines
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure outcomes are reviewed against the project plan and scope to correctly assess project success
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- methods of problem identification and resolution
- the preparation of plans and tasking of resources
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation

EVIDENCE GUIDE**competency in this unit**

- policies and procedures for coordinating projects
- maintaining a working knowledge of current organisation inventory procedures
 - working and communicating effectively and positively with others involved in the work
 - applying, within authority, the requirements of the job or work role in relation to:
 - implementing, monitoring, and successfully completing project activities
 - contributing to reports of results
 - completing work area housekeeping requirements including the documentation of project activity and process outcomes
 - modify activities to cater for variations in organisation context and environment.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Instructions</i> may include:	- workplace procedures relating to the use and operation of tools and equipment - departmental requirements - workplace instructions, including job sheets, plans, specifications, drawings and designs - workplace procedures relating to reporting and communications - manufacturers' instructions for the use of equipment and materials.
<i>Coordinate the project activities</i> may include:	the coordination of project activities in meeting project timelines and performance outcomes. The coordination is based on the subject matter expertise rather than the formal supervisory role.
<i>Project leader</i> may include:	the person given authority of the resources to undertake the project and to realise the project's objectives. Whilst the project leader may have contributed to the project design, further design, prioritisation, the definition of objectives and the tasking of resources may be the responsibility of other stakeholders.
<i>Team members</i> may include:	those persons tasked to supporting the project. A team member may be a team member on several unrelated teams.
<i>Stakeholders</i> may include:	parties such as the design engineers, test/trial operators and corporate resource and budget managers with an interest in the test/trial conduct and/or outcome.

Unit Sector(s)

Unit sector	Teamwork, Supervision and Management

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMAMM3001 Influence and lead work groups in an automotive manufacturing environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to influence and lead work groups in an automotive environment including resolving problems as they arise. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and determine group activity	1.1. <i>Instructions, organisational requirements</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.2. Information about objectives is obtained and clarified 1.3. Optimal method to complete a new activity or a number of related activities is planned on a cooperative basis 1.4. Responsibility for planning a component of activity is taken on an individual or shared basis 1.5. Responsibility for completion of certain components of activities is accepted on an agreed or shared basis
2. Participate in work group activity	2.1. Forms of communication appropriate to the activity are applied 2.2. Responsibility for quality, timeliness and appropriate levels of productivity is taken on an agreed individual and shared basis 2.3. Assistance in completion of activities is sought where required 2.4. Problems are discussed and resolved through accepted processes
3. Monitor progress of activity	3.1. Processes are decided on an individual and collective basis 3.2. Individual members of the work team monitor their role in the activity's progress 3.3. Feedback is provided to the work group on effectiveness of activity 3.4. Ways of improving performance are proposed and agreed upon on a collective basis

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations
- solve problems particularly in teams paying attention to performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- quality systems and performance measures
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for influencing and leading work

EVIDENCE GUIDE

	groups - working and communicating effectively and positively with others involved in the work - applying, within authority, the requirements of the job or work role in relation to: - ways to effectively review performance are decided upon either individually or with others - feedback is provided to the work group on the effectiveness of the activity - achieving work quality goals - completing work area housekeeping requirements - modify activities to cater for variations in organisation context and environment.
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Instructions may include:

- organisation procedures relating to the use and operation of tools and equipment
- production planning figures
- organisation instructions, including job sheets, plans, specifications, drawings and designs
- organisation procedures relating to reporting and communications
- manufacturers' instructions for the use of equipment and materials.

Organisational requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Unit Sector(s)

Unit sector	Teamwork, Supervision and Management - Manufacture

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMANA3001 Prepare and document quotation

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to prepare a job quotation for a customer. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text

of competency.	is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine customer requirements	1.1. Customer product requirements are established and project parameters specified in accordance with organisation requirements 1.2. Customer requirements are compared with existing organisation products 1.3. Product variations required by the customer are established 1.4. Customer purchase and payment arrangements are negotiated
2. Estimate job labour, parts and material requirements	2.1. Variations from standard organisation product are estimated 2.2. Additional processes, parts and skills required to meet customer requirements are estimated 2.3. Draft project brief established for costing 2.4. Job schedule and material list is prepared
3. Cost the job	3.1. Organisation job costing procedures, including cost reduction initiatives , are employed to determine job budget 3.2. Estimated materials, labour and equipment costs are totalled for the job 3.3. Estimations for contingencies and changed work requirements are included in the total budget 3.4. Job and budget requirements are included in organisation production schedules
4. Document and confirm quote	4.1. Quotation is prepared in accordance with organisation requirements 4.2. Quotation provided reflects customer requirements 4.3. Changes and variations are negotiated to meet customer and organisation needs 4.4. Organisation records/customer file is created for the job

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to negotiate customer paying arrangements
- apply teamwork to a range of situations, including the estimation of the job schedule
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure quote is prepared in accordance with organisation requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- computer applications relating to estimation and costing
- labour rates for job schedule
- procedures for planning and estimating a job
- customer contact and negotiation skills
- organisation OHS procedures and policies
- organisation quotation production flow chart.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • preparation of detailed estimates of labour, parts and equipment • completion of detailed quote • calculation and allowance for contingencies • maintain organisation records - paper based / electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular

EVIDENCE GUIDE

	circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisation requirements
may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Cost reduction initiatives
may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Changed work requirements
may include:

- interruptions to parts supply/quality
- line speed
- personnel absences and the needing to fill production line gaps.

Unit Sector(s)

Unit sector	Loss Assessment or Repair Quoting

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMAQA4001 Apply quality assurance techniques

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to apply quality assurance techniques to all operations involving plant, tooling, equipment or systems required for the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret and apply quality standards	1.1. Applicable <i>organisation requirements</i> relevant to <i>applying quality assurance techniques</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Quality standards are interpreted and applied to individual and team work 1.4. Process improvement tools are used either individually or in a team to identify and solve design, development and production quality problems
2. Monitor and report on quality	2.1. Quality of all received, in-work and finished materials and products is checked and appropriate action taken in accordance with quality management strategies 2.2. Change in quality of performance is monitored using quality improvement tools and feedback data 2.3. Further action to improve quality is recommended, where required, using standard operating procedures either individually or in a team
3. Implement quality improvement	3.1. Analytical tools are used to evaluate principal causes of process variation and the success of project improvement strategies 3.2. Outcomes of the evaluation of principal causes of process variation are used in a continuous cycle of quality improvement

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to recommend actions to further improve quality
- apply teamwork to a range of situations, including in the utilisation of process improvement tools to identify and solve quality problems
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure quality standards to be applied throughout the organisation are correctly interpreted
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- methods for interpreting performance results
- operation of systems and components
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- methods for interpreting and applying quality standards
- methods for implementing quality improvement
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

EVIDENCE GUIDE**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for the application of quality assurance techniques
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
- applying continuous improvement
- preparing reports of results
- achieving work quality goals
- completing work area housekeeping requirements including the documentation of project activity and process outcomes.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisational requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Applying quality assurance techniques may include:

- the application of quality management techniques including continuous improvement in the design, development and production of motor vehicles.

Instructions may include:

- workplace procedures relating to the use and operation of tools and equipment
- departmental requirements
- workplace instructions, including job sheets, plans, specifications, drawings and designs
- workplace procedures relating to reporting and communications
- manufacturers' instructions for the use of equipment and materials.

Unit Sector(s)

Unit sector

Quality

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMASA2001 Monitor and maintain a safe workplace and environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge for the maintenance of a safe and secure workplace and external environment within the Automotive Manufacturing industry. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and follow OHS and environmental regulations and/or policies and procedures	1.1. <i>OHS and environmental regulations, organisation policies and procedures</i>, signs and codes as they apply to the <i>job context</i> are identified and correctly interpreted 1.2. The roles and responsibilities of <i>key personnel</i> within the area connected with health, safety, security and the environment are identified 1.3. Employer and employee <i>legislative rights and responsibilities</i> in relation to health, safety, security and the environment are identified 1.4. <i>Housekeeping</i> is undertaken in accordance with organisation procedures and OH&S guidelines
2. Use appropriate personal protective equipment	2.1. <i>Personal protective equipment</i> appropriate for the area of operation is identified 2.2. Personal protective equipment is maintained and stored in accordance with organisation policy and manufacturers' specifications 2.3. Personal protective equipment is used when and where required in accordance with authorised procedures and manufacturers' specifications
3. Apply approved manual handling techniques	3.1. Manual handling techniques and equipment appropriate for the area of work are identified 3.2. Manual handling techniques and equipment are selected and used in the workplace in accordance with organisation procedures and legislative guidelines
4. Respond to <i>hazards</i> and potential hazards in the workplace	4.1. Situations which may contain hazards and/or potentially hazardous to the health and safety of team members and to the environment are identified 4.2. <i>Hazards are treated</i> locally or responded to in accordance with the threat level and the organisation policy and procedures

ELEMENT	PERFORMANCE CRITERIA
	4.3. Non-conformances in the use, storage and labelling of <i>hazardous materials</i> are identified and reported to the appropriate personnel in accordance with organisation procedure
5. Complete incident/accident reports as/when required	5.1. Organisation's incident/accident reporting procedures are identified 5.2. Incident/accident reports are completed as/when required in accordance with organisation procedures and submitted to the appropriate authority
6. Follow emergency procedures	6.1. Emergency, accident or hazardous situations are reported to the appropriate personnel, using authorised methods of contact 6.2. Evacuation and emergency response procedures are identified and followed 6.3. <i>Emergency equipment</i> is accessed and used in accordance with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate with all personnel on safe work practices
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to maintain appropriate safety standards and hazard control
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- common automotive manufacturing workplace hazards

REQUIRED SKILLS AND KNOWLEDGE

- common automotive manufacturing environmental hazards
- types, characteristics, uses and limitations of personal protective equipment
- safe lifting theory
- risk treatment options
- enterprise emergency procedures
- correct handling and storage of equipment and tools to comply with OH&S and environmental requirements
- environmental protection requirements
- characteristics of materials, products and defects
- procedures for recording, reporting and maintenance of workplace records and information
- established communication channels and protocols.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant OH&S, environmental legislation, regulations, standards, codes of practice and enterprise policies and procedures
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - identifying and following OH&S and environmental policies and procedures
 - correctly selecting and using personal protective equipment
 - applying approved manual handling techniques
 - responding effectively to hazards and potential hazards in the workplace
 - completing incident/accident reports correctly
 - following enterprise emergency procedures

EVIDENCE GUIDE	
	• modify activities to cater for variations in workplace context and environment.
Context of and specific resources for assessment	Assessment must ensure: • underpinning skill, knowledge and attitudes for each unit of competency in each work area, and for specific job roles within work areas, will differ between enterprises, and will alter from time to time depending on factors such as changes in equipment, technology and culture • before skill, knowledge and attitudes development and assessment of the trainee begins, key operators in the area, in conjunction with trainers, union representatives and other stakeholders, must list the underpinning knowledge, skill and attitudes required to perform the unit competently (to standard). This will be used as a guide for training and assessment • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints • assessment is to comply with relevant regulatory or Australian Standards requirements • assessment of the underpinning knowledge should be combined with assessment of the skill • assessment of the underpinning knowledge may take place on- or off-the-job • assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS and environmental regulations may include:

- Commonwealth, State or Territory legislation and regulations organisation safety policies and procedures. Requirements may include but not be limited to the use of personal protective equipment and clothing, fire fighting equipment, first aid equipment, hazard and risk control and elimination, control of hazardous materials and substances, manual handling including lifting and carrying.

Organisational policies and procedures may include:

- enterprise policies and procedures including enterprise OH&S and environmental policy and procedures
- ISO standards (Quality Management and Environmental)
- Vehicle Industry OH&S Award
- standard operating procedures
- suppliers' operating instruction manuals.

Job context may include:

- Work areas including:
 - body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture
- Processes including:
- welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.

Key personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Legislative rights and

- applicable legislation from all levels of government that affect organisational operation. Requirements may include but not be

RANGE STATEMENT	
responsibilities may include:	limited to award and enterprise agreements, industrial relations, Australian Standards, confidentiality and privacy, OH&S, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice, duty of care and heritage.
Housekeeping may include:	• cleanliness of work areas • correct local storage of materials • avoidance or removal of spillages • removal of dust • local servicing of work implements • maintenance of signage.
Personal protective equipment may include:	• gloves • safety boots • glasses • ear plugs • helmets • protective clothing.
Hazards may include:	• poor lighting • spillages • power sources and distribution leads • damaged tool and equipment • obstructions • heat • radiation • fumes • chemicals • noise • vibration • fire or combustible materials • vehicle/plant movement • cranes/lifting equipment • excess water and hazardous materials.
Hazards are treated may include:	• area • area isolation • guarding • cleaning of spillages • removal of hazardous materials • replacement of faulty equipment/materials • removal of obstructions • the additional use of personal protective equipment or other appropriate measures.

RANGE STATEMENT

Emergency equipment may include:

- fire fighting resources
- first-aid equipment
- spillage containment
- emergency rescue equipment.

Unit Sector(s)**Unit sector**

Health and Safety

Competency field**Competency field**

Manufacturing - Common

Co-requisite units

Not applicable.

AUMASM3001 Maintain a safe automotive manufacturing work environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to maintain a safe automotive manufacturing work environment. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan for maintaining a safe automotive work environment	1.1. Applicable <i>legislative, OHS, and organisational requirements</i> relevant to maintaining a safe automotive manufacturing work environment are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Principal safety concerns in the work area are identified 1.4. Principal business processes and procedures in the work area, particularly those relating to maintaining a safe environment, are identified
2. Maintain the necessary conditions for a safe work environment	2.1. Information on maintaining a safe work environment is provided to the work team 2.2. Operational procedures are monitored 2.3. Continuous improvement initiatives are supported
3. Monitor and improve safety within the area of responsibility	3.1. Environmental improvement plans are integrated with other operational activities 3.2. Accident/incident records and statistics are maintained and analysed in accordance with organisational policy and procedures 3.3. Best practice initiatives improving the environmental performance by reducing environmental risk and waste are identified, implemented and monitored 3.4. Potential safety hazards are identified and reported in accordance with organisational procedures 3.5. Recommendations for improvement are made in accordance with organisational procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations
- solve problems particularly in teams paying attention to performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- quality systems and performance measures
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for maintaining a safe work environment
- working and communicating effectively and positively with

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	others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • use of signage and labelling in the workplace • feedback is provided to the work group on the effectiveness of the activity • achieving work quality goals • completing work area housekeeping requirements • modify activities to cater for variations in organisation context and environment.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present

RANGE STATEMENT	
with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
Legislative requirements are to be in accordance with:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and enterprise agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
OHS requirements may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
Organisational requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Instructions may include:	• workplace procedures relating to the use and operation of tools and equipment • production planning figures • workplace instructions, including job sheets, plans, specifications, drawings and designs

RANGE STATEMENT

	• workplace procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials.

Unit Sector(s)

Unit sector	Health and Safety - Manufacture

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATA2001 Develop and produce documentation and procedures

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to develop, trial and produce suitable documentation to support the maintenance, tooling and development operations required for the design, development and production of bus/truck trailers. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify documentation requirements	1.1. The need for documentation is identified and evaluated in consultation with management, production, development and maintenance staff, and in accordance with <i>organisation requirements</i> 1.2. Specifications and justification for documentation and associated procedures are prepared ensuring that the documentation will facilitate efficient and effective communication between the relevant internal and/or external persons involved in the processes concerned 1.3. Approval is sought from <i>appropriate personnel</i> for the proposed documentation arrangements, and appropriate changes made, as required
2. Develop draft documentation, procedures and usage instructions	2.1. Suitable documentation and associated procedures are developed in accordance with the approved specification for proposed arrangements
3. Trial and modify draft documentation, procedures and usage instructions	3.1. Draft documentation, procedures and usage instructions are prepared and trialled with the intended users in accordance with company requirements 3.2. The draft documentation, procedures and usage instructions are appropriately modified in accordance with feedback provided by the intended users to meet <i>work quality goals</i> 3.3. A report on the outcomes of the trial of draft documentation, procedures and usage instructions is prepared and approval sought from appropriate personnel for implementation of the proposed arrangement in accordance with company procedures
4. Produce documentation and usage instructions	4.1. Documentation and usage instructions as approved are produced according to specifications and company procedures 4.2. Intended users are instructed in the use of the

ELEMENT	PERFORMANCE CRITERIA
	documentation in accordance with company requirement
5. Store and distribute documentation and usage instructions	5.1. Documentation and usage instructions, as approved, are stored and distributed in accordance with company requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate changes in documentation development to relevant personnel
- apply teamwork to a range of situations, including the trialling of new documentation
- solve problems particularly in teams in order to meet performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure documentation meets organisation templates and standards
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- product documentation requirements
- trialling and modifying processes
- documentation processes - both paper based and electronic
- processes for storing and distributing documentation - paper based, electronic.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • develop, trial, modify and produce draft documentation • develop and store final documentation for procedures and production.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant

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	contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
<i>Appropriate personnel</i> may include:	• clients and managers • supervisors • suppliers • team leaders • team members.

RANGE STATEMENT

Work quality goals may include:

those established within a quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.

Unit Sector(s)

Unit sector

Technical

Competency field

Competency field

Manufacturing - Common

Co-requisite units

Not applicable.

AUMATA3002 Conduct final inspections and functional tests

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to carry out pre road test checks and final simulated or on road performance testing. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan inspection test procedure	1.1. Tools and equipment are selected to meet job requirements 1.2. Tools and equipment are regularly checked to ensure they are in good working order 1.3. Inspection procedure is verified and appropriate people notified
2. Conduct inspection/tests	2.1. Job sheets from previous inspections are checked and vehicle/component inspected to verify that faults have been rectified 2.2. Components/systems are tested for functional / mechanical operation to ensure they conform to specifications, tolerances and company standards 2.3. Surfaces are inspected against the job specifications and quality standards 2.4. Inspection procedure is completed in accordance with company OH&S and operating procedures 2.5. Job sheets are completed in accordance with company procedures
3. Identify and label/mark faults	3.1. Components/surfaces not meeting customer/company standards/specifications are identified 3.2. Faults are labelled in accordance with company procedures
4. Record and report faults	4.1. Appropriate forms are selected for recording and reporting identified faults 4.2. Selected forms are completed in accordance with company procedures 4.3. Faults are reported to appropriate personnel for action

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate identified faults with appropriate personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure correct quarantine procedures are implemented on faulty vehicles
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- reading and interpreting quality control standards
- types and purpose of the range of test equipment used to check for quality performances to specifications
- application procedures for the use of the test equipment
- knowledge of service lines and components and their purpose within the assembly
- relevant organisation/manufacture policies and standard operational assembly and installation procedures
- work flow records and procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the

EVIDENCE GUIDE	
Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • identify faults / non-conformance of components and systems • read and interpret quality control standards • interpret and communicate operational information • confirm performance to quality control standards • use of appropriate test equipment • employ safe working practices • report test results - verbal, written, electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge

EVIDENCE GUIDE

	- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Organisation requirements</i> may include:	- access and equity principles and practices - environmental management (waste disposal, recycling and re-use guidelines) - emergency and evacuation procedures - equipment use procedures - ethical standards - maintenance and storage procedures - organisational and site guidelines - policies and procedures relating to own role and responsibility - procedural manuals - quality assurance guidelines - quality and continuous improvement processes and standards - recording and reporting guidelines.
<i>Legislative requirements</i> and	Applicable legislation, regulations and codes of practice, including

RANGE STATEMENT

procedures may include:	those related to: • anti-discrimination • award and organisation agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
<i>Appropriate personnel</i> may include:	• clients and managers • supervisors • suppliers • team leaders • team members.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATA3003 Rectify faults in vehicle metal components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to inspect, assess and repair damage to vehicle metal components as a result of manufacturing and production line damage or defective metal. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare workplace	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with <i>appropriate personnel</i> and applied 1.3. Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use 1.5. Working environment considerations are identified and measures to reduce noise, dust and obstacles are applied
2. Assess damages/defects	2.1. Vehicle bodies/parts are inspected to confirm the extent and nature of damage or metal defects 2.2. Damage or defects found are assessed for remedial solutions 2.3. Solution to repair the damage or defect is selected and planned
3. Produce specialised repair instruments	3.1. Drawings or sketches are produced to design necessary repair instruments 3.2. Equipment or tooling to make the instruments is selected 3.3. Instruments are produced according to drawings or sketches 3.4. Instruments are assessed and modified if necessary to suit the damage or defect
4. Repair damage/defect	4.1. Specialist instruments and general body repair tools are applied to rectify identified damage or defects 4.2. Damage or defective area is repaired to specifications 4.3. Documentation is completed outlining nature of problem, work conducted and outcome, in accordance with

ELEMENT	PERFORMANCE CRITERIA
	organisation requirements 4.4.Repaired vehicle/parts are processed for inspection and returned to the production sequence
5. Clean up	5.1.Work area is cleared and materials disposed of, reused or recycled in accordance with cost reduction initiatives 5.2.Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly to communicate critical features of repair instrument plans to appropriate personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure OHS requirements are maintained during the production of repair instruments
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- organisation and equipment safety requirements
- relevant organisation production quality standards
- automotive Industry terminology
- organisation manufacturing and production techniques for vehicle metal components
- specialist metal repair tools and equipment types, characteristics, uses and limitations
- metal properties and workability limitations
- metal damage and defects
- metal component body repair techniques
- tool making equipment and techniques
- processes for the calculation of material requirements
- material Safety Data Sheets

REQUIRED SKILLS AND KNOWLEDGE

- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian Standards.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • location, interpretation and application of relevant information, standards and specifications • compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations • compliance with organisation policies and procedures including quality requirements • safe and effective operational use of tools and equipment • communication and working effectively and safely with others • inspection, assessment and rectification on a minimum of 5 separate and different damage incidents and at least 1 defective metal problem, to specifications and organisation inspection requirements.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant

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	contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards

RANGE STATEMENT	
	• recording and reporting guidelines.
<i>Appropriate personnel</i> may include:	• clients and managers • supervisors • suppliers • team leaders • team members.
<i>Cost reduction initiatives</i> may include:	• continuous improvement programs • cost benchmarks • power conservation • productivity achievement • waste avoidance.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATA3004 Rectify mechanical faults on assembled vehicles

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to rectify mechanical faults based on recommendations from inspection records. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with <i>appropriate personnel</i> and applied 1.3. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained and prepared
2. Diagnose and rectify mechanical fault	2.1. Inspection report is interpreted and fault located 2.2. Fault is diagnosed and suitable method of correction planned 2.3. Rectification is applied in accordance with engineering specifications 2.4. Fault is re-diagnosed to assess outcome of rectification and to ensure rework has eliminated the fault and final adjustments are made 2.5. Documentation is completed outlining nature of problem, work conducted and outcome, in accordance with organisation requirements 2.6. Vehicle is returned to production sequence
3. Clean up	3.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and <i>cost reduction initiatives</i> 3.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of suitable methods of fault correction
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure OHS requirements are adhered to during the rectification process
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant organisation production quality standards
- organisation manufacturing and production techniques for mechanical components and systems
- automotive industry terminology
- tools and equipment types, characteristics, uses and limitations
- mechanical faults and symptoms
- engine parts and construction
- mechanical diagnosis techniques
- processes for the calculation of material requirements
- material Safety Data Sheets
- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian Standards.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment

EVIDENCE GUIDE	
Guidelines for this Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • location, interpretation and application of relevant information, standards and specifications • compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations • compliance with organisation policies and procedures including quality requirements • safe and effective operational use of tools and equipment • communication and working effectively and safely with others • completion of diagnosis and rectification of mechanical faults on a minimum of five (5) separate vehicles each with different faults, rectified to engineers specifications and organisation inspection requirements
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Cost reduction initiatives may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATA3005 Rectify assembly faults in assembled vehicles

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to rectify assembly faults, including sealing systems, based on recommendations from the inspection records and reports of the fully assembled vehicle. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with <i>appropriate personnel</i> and applied 1.3. Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use
2. Locate and rectify assembly faults	2.1. Final report is interpreted and fault located 2.2. Assembly fault is diagnosed and suitable method of correction planned 2.3. Rectification is applied in accordance with engineering specifications 2.4. Fault is re-diagnosed to assess outcome of rectification and to ensure rework has eliminated the fault, and any final adjustments made 2.5. Documentation is completed outlining nature of problem, work conducted and outcome, in accordance with organisation requirements 2.6. Vehicle is returned to production line
3. Locate and rectify sealing system faults	3.1. Final report is interpreted and faults located 3.2. Sealing faults are assessed and suitable method of correction planned 3.3. Rectification is applied in accordance with engineering specifications 3.4. Faults are water tested to check outcome of rectification and to ensure rework has eliminated the fault, and any final

ELEMENT	PERFORMANCE CRITERIA
	adjustments made 3.5. Documentation is completed outlining nature of problem, work conducted and outcome, in accordance with organisation requirements 3.6. Vehicle is returned to production sequence
4. Clean up	4.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and cost reduction initiatives 4.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of suitable correction methods to be used
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure faults are properly rectified before vehicle is returned to production sequence
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant organisation production quality standards
- automotive industry terminology
- manufacturing and production techniques for vehicle assembly and sealing systems
- common assembly and sealing system faults
- tools and equipment types, characteristics, uses and limitations
- sealing system testing techniques including water testing
- processes for the calculation of material requirements
- material Safety Data Sheets

REQUIRED SKILLS AND KNOWLEDGE

- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian standards
- vehicle components and systems.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- location, interpretation and application of relevant information, standards and specifications
- compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations
- compliance with organisation policies and procedures including quality requirements
- safe and effective operational use of tools and equipment
- communication and working effectively and safely with others
- completion of the diagnosis, rectification and reassembly to specification covering a minimum of five (5) significant assembly faults including those requiring:
 - the removal and re-assembly of the instrument
 - panel
 - the disassembly and re-assembly of door
 - components
 - the replacement of upholstery
 - the replacement of trimming
- completion of diagnosis and rectification to specification of sealing system faults on a minimum of five (5) separate vehicles including a minimum of:
 - one involving a door
 - one involving a windscreen seal

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	• one involving a boot seal fault; and • one involving the forward passenger • compartment floor
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and

RANGE STATEMENT	
	substances and manual handling procedures including lifting and carrying.
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.
Cost reduction initiatives may include:	• continuous improvement programs • cost benchmarks • power conservation • productivity achievement • waste avoidance.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATA4006 Provide technical advice

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to provide technical advice related to automotive development activities. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and analyse the issues	1.1. Applicable organisational requirements relevant to the provision of advice in an automotive development setting are verified and complied with throughout 1.2. Instructions and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. The circumstances that require the provision of advice are observed, received and clarified 1.4. The issues are identified and confirmed if necessary through consultation with relevant personnel 1.5. The circumstances are analysed and the issue(s) are interpreted and clearly defined 1.6. Research related to the issue(s) is conducted and the advice of relevant personnel is sought to clarify findings that are unclear
2. Formulate options	2.1. Options related to the provision of advice are identified and evaluated 2.2. Options are prioritised and the preferred option(s) is chosen
3. Provide advice	3.1. Advice is formulated and discussed with stakeholders 3.2. Stakeholders' requirements are negotiated, documented and incorporated within the proposed advice 3.3. Concluding advice is provided in accordance with ethical and practical guidelines and within specified time and budget

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

- speak clearly and directly in order to give clear instructions and advice to others of differing technical understanding
- apply teamwork to a range of situations to achieve organisation outcomes
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to give advice appropriately
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- area of technical expertise
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and methods of resolution
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for providing technical advice
- maintaining a working knowledge of current enterprise automotive development procedures
- working and communicating effectively and positively with others involved in the work

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	• applying, within authority, the provision of technical advice which could include: • preparing for tests or trials • performing tests or trials • preparing reports of results • achieving work quality goals • modify activities to cater for variations in organisation context and environment.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

RANGE STATEMENT	
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Advice may include:	• the technical expertise of a relevant person and may be formal or informal, verbal or written, by request or spontaneous and relating to automotive development activities associated with the person's role/tasks.
Instructions may include:	• workplace procedures relating to the use and operation of tools and equipment • departmental requirements • workplace instructions, including job sheets, plans, specifications, drawings and designs • workplace procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials
Ethical and practical guidelines may include:	• the compliance with professional codes of practice

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATA4007 Conduct simulated or road performance test

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to carry out pre road test checks and final simulated or on road performance testing. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Pre-road test check	1.1. All activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Vehicle for testing is positioned on site to prevent injury or damage from vehicle malfunction 1.3. Pre road test is performed to ensure vehicle has recommended supply of fuel and lubricants for vehicle to perform without failure 1.4. Driver safety items are checked to ensure they are fully functional and operational and meet quality control standards and specifications 1.5. Appropriate documentation is completed 1.6. Temporary registration plates are fitted to the vehicle for its on road test (if applicable) 1.7. Vehicle is installed on chassis dynamometer for testing (if applicable)
2. Test vehicle for on road or truck chassis dynamometer performance	2.1. Vehicle is driven on road in accordance with state road regulations and <i>legislative requirements</i> 2.2. Vehicle is tested on road to ensure it steers correctly, rides smoothly and performs under load conditions 2.3. Vehicle is tested to ensure it is free of vibrations, squeaks and rattles, that all indicators and gauges operate to give accurate readings, and that the brakes operate efficiently 2.4. Minor adjustments are made if necessary to ensure vehicle is safe during on road tests
3. Record and report faults	3.1. Appropriate forms are selected and used for recording and reporting faults 3.2. Faults are reported to <i>appropriate personnel</i> for follow up action
4. Implement quarantine procedures	4.1. Faults are identified from performance test sheets for quarantine purposes 4.2. Quarantine procedures are implemented to ensure a faulty vehicle is not dispatched to a customer

ELEMENT	PERFORMANCE CRITERIA
	4.3. Vehicle is placed in quarantine based on type of faults to be rectified 4.4. All necessary documentation is completed in accordance with organisation procedures
5. Rectify faults	5.1. Tools and equipment are selected and used to meet the job requirements as stated in the standard operating procedures /workshop manual 5.2. Rectification job sheets are read to ensure rectifications are performed on identified faults 5.3. Faults are rectified to ensure the vehicle performs to organisation quality control standards and performance specifications 5.4. Vehicle is retested on road to ensure faults have been rectified and that the vehicle performs to specification 5.5. Job rectification sheets are completed
6. Conduct final inspection and commission for release	6.1. Vehicle is inspected to ensure all rectifications are completed to organisation quality control standards 6.2. Vehicle is inspected to ensure it is built to specification and to the relevant Australian Design Rules 6.3. Vehicle is inspected to ensure it matches the original order 6.4. Compliance and vehicle identification plates are fitted 6.5. Vehicle is dispatched for customer delivery processes

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate identified faults with appropriate personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure correct quarantine procedures are implemented on faulty vehicles
- manage time when planning, preparing and organising work priorities

REQUIRED SKILLS AND KNOWLEDGE

- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- reading and interpreting quality control standards
- types and purpose of the range of test equipment used to check for quality performances to specifications
- application procedures for the use of the test equipment
- knowledge of service lines and components and their purpose within the assembly
- relevant organisation/manufacture policies and standard operational assembly and installation procedures
- work flow records and procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work

EVIDENCE GUIDE	
	• applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • identify faults / non-conformance of components and systems • read and interpret quality control standards • interpret and communicate operational information • confirm performance to quality control standards • use of appropriate test equipment • employ safe working practices • report test results - verbal, written, electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Legislative requirements and procedures may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and organisation agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

Appropriate personnel may include:

- clients and managers
- supervisors

RANGE STATEMENT

	• suppliers • team leaders • team members.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATA5008 Produce drawings manually

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to produce drawings, using manual drafting techniques, required in the design, development and production of bus/truck/trailers. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Clarify manual drafting requirements	1.1. Project objectives for the design brief or problem are clarified and defined in accordance with <i>organisation requirements</i> 1.2. <i>Relevant parameters</i> are identified and interpreted 1.3. Drafting requirements and processes are clarified based on consideration of project objectives and identified parameters
2. Select tools, equipment and media	2.1. Required tools, equipment and media for the manual drafting project are selected from appropriate <i>resources</i>
3. Make any required measurements	3.1. Any measurements of components, sub-assemblies, products, models, equipment, layouts or facilities needed for the preparation of the required drawings are made and recorded
4. Prepare and check drawings	4.1. Critical dimensions and data for the required drawing are established 4.2. As required, preliminary sketches are prepared and reviewed with <i>appropriate personnel</i> 4.3. Drawings are prepared in accordance with project objectives, specifications and standards 4.4. Drawings are checked against project objectives, specifications and organisation standards, and any necessary changes made
5. Document and store drawings	5.1. Drawings and associated technical information are documented in accordance with project requirements and organisation procedures 5.2. The drawings and associated documentation are processed for approval 5.3. Drawings and associated documentation are stored in accordance with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to review drawings with appropriate personnel
- apply teamwork to a range of situations, including the preparation of drawings
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure drawings are documented and stored in accordance with organisation procedures and project requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisation technical work documentation covering procedures, specifications, schedules and work plans
- organisation cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- processes to clarify manual drafting requirements
- processes to select tools, equipment and media
- processes to make required measurements
- processes to check drawings
- processes to document drawings
- processes to store drawings.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

EVIDENCE GUIDE	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • clarify manual drafting requirements • select tools, equipment and media • make any required measurements • prepare drawings manually • check drawings • document drawings • store drawings - paper based / electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its

EVIDENCE GUIDE

	correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Relevant parameters may include:

- functional specifications
- quality targets
- materials
- ergonomic considerations
- documented standards
- technical information
- cost constraints

RANGE STATEMENT	
	• manufacturing processes.
Resources may include:	• type of product or sub-assembly to be designed • design brief and associated design parameters (eg materials, cost constraints, processes to be used, quality requirements) • documentation and reporting systems • occupational health and safety standards • drawing equipment • access to professional staff • qualified workplace assessors • workplace or simulated workplace.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATE3001 Rework production engines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to rework an engine after testing has identified operating inconsistencies or faults. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed and applied 1.3. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained and prepared
2. Validate, confirm or vary test findings	2.1. Engine is mounted in the engine testing cradle 2.2. Services are connected to the engine simulating normal operating conditions 2.3. Engine is brought to hot operating conditions 2.4. Computerised and/or physical tests are conducted on the reported faults of the engine against designated performance specifications 2.5. Results of all tests are confirmed or varied and documented
3. Rectify engine fault	3.1. Fault is identified 3.2. Fault is diagnosed and suitable method of correction planned 3.3. Minor and/or major rectification is applied, dependent on the fault and in accordance with engineering specifications 3.4. Engine is re-tested to ensure rework has eliminated the fault and final adjustments made 3.5. Documentation is completed outlining work conducted and outcome 3.6. Engine is transferred to the designated holding area
4. Clean up	4.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and <i>cost reduction initiatives</i>

ELEMENT	PERFORMANCE CRITERIA
	4.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to confirm or question engine test results with appropriate team members
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure rectifications are completed in accordance with work quality standards
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant organisation production quality standards
- organisation manufacturing and production techniques of engines
- automotive Industry terminology
- mechanical principles and functions within engines
- tools and equipment types, characteristics, uses and limitations
- engine faults and symptoms
- engine testing techniques and equipment
- engine rework techniques and equipment
- processes for the calculation of material requirements
- material Safety Data Sheets
- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian standards.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with organisation safety policies and procedures and OHS Legislation/regulations/codes of practice applicable to operations
- Compliance with organisation policies and procedures including quality requirements
- Safe and effective operational use of tools and equipment
- Communication and working effectively and safely with others
- Safe and effective handling and placement of the engine
- Completion of diagnosis and rectification of at least 5 separate, different and significant engine faults to engineers specifications and organisation inspection requirements.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Cost reduction initiatives may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK1001 Select and use tools and equipment in an automotive manufacturing environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to choose resources to complete a variety of tasks under direct supervision in an automotive manufacturing environment. It includes selecting and using tools and equipment and reporting faults to the appropriate person. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a high school level. They are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select equipment/tools	1.1. Applicable <i>legislative, OHS, and organisational</i> requirements relevant to the use of <i>tools and equipment</i> are verified and complied with 1.2. <i>Instructions</i> and work to be performed are clarified 1.3. Tools, equipment or <i>resources</i> required to complete the task are identified 1.4. Tools, equipment and resources required to complete the task are correctly estimated and obtained
2. Use tools and operate equipment	2.1. Tools are used under direct supervision and in accordance with workplace procedures and OHS requirements 2.2. Equipment is operated in accordance with manufacturers' instructions and under direct instruction 2.3. All faults with tools and equipment are identified and reported to <i>appropriate personnel</i>
3. Maintain equipment/resources	3.1. Equipment/resources to support completion of tasks are maintained under direct instruction 3.2. <i>Records</i> concerning equipment/resources are maintained under direct instruction 3.3. Equipment and resources are stored under direct instruction

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to clarify instructions and report to appropriate personnel

REQUIRED SKILLS AND KNOWLEDGE

- apply teamwork to a range of situations
- solve problems particularly in teams in order to perform work safely and on time
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to selecting and using tools
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- common automotive manufacturing workplace hazards
- types, characteristics, uses and limitations of personal protective equipment
- safe lifting theory
- organisation emergency procedures
- correct handling and storage of equipment and tools to comply with OHS and environmental requirements
- environmental protection requirements.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for OHS
- provide evidence of listening carefully and following instructions on how to select and operate equipment
- apply safe handling requirements for equipment, tools, products and materials, including use of personal protective equipment
- undertake routine maintenance while following instructions in accordance with operating manual

EVIDENCE GUIDE

	- communicates faults and/or risks to appropriate people - follow work instructions, operating procedures and inspection practices to: - prevent damage to goods, equipment and products - maintain required production output and product quality - minimise the risk of injury to self and others. - work effectively with others - modify activities to cater for variations in workplace context and environment.
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility

RANGE STATEMENT	
of the item, and local industry and regional contexts.	
Legislative requirements may include:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and enterprise agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
OHS requirements may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
Organisational requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Tools and equipment may include:	• hand tools • air tools • battery operated tools • torque wrenches.
Instructions may include:	• workplace procedures relating to the use and operation of tools

RANGE STATEMENT	
	and equipment • workplace instructions, including job sheets, plans, drawings and designs • workplace procedures relating to reporting and communication • manufacturer's instructions for the use of equipment and materials.
Resources may include:	• facilities • equipment • human resources • OHS resources • Personal Protective Equipment (PPE) • materials.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.
Records may include:	• equipment service call forms • service repair forms • audit forms • check sheets • attendance forms.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK2002 Prepare, use and operate equipment, tools and machinery

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to prepare use or operate equipment, tools and machinery as required for the full range of contexts in the Automotive Manufacturing industry. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select equipment, tools and/or machinery required for the operation/process	1.1. Applicable <i>legislative, OH&S and organisation requirements and procedures</i> relevant to the use/operation of equipment/tools and machinery are verified and complied with 1.2. The appropriate equipment, tools and machinery are identified and selected according to the <i>job context</i>
2. Inspect and check equipment, tools and/or machinery prior to use	2.1. <i>Equipment, tools and machinery</i> are checked to ensure they are in operational order 2.2. Defective equipment, tools and machinery are identified and reported according to company procedures
3. Prepare and use equipment, tools and machinery as required by the process/operation	3.1. Equipment, tools and machinery are prepared according to organisation procedures and manufacturer specifications 3.2. Equipment, tools and/or machinery are used correctly as required by the process/operation according to organisation procedures, and manufacturer specifications
4. Complete the work	4.1. Equipment, tools and/or machinery are shut down and stored at the conclusion of the operation according to organisation procedures 4.2. Work area is cleaned and restored in accordance with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

- speak clearly and directly in order to identify appropriate equipment
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to select and use equipment tools and machinery
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- upstream customers and their requirements
- the types, characteristics, uses, limitations and operator techniques for the equipment, tools and machinery relevant to the work area
- relevant product assembly techniques
- correct handling and storage of equipment and tools to comply with OH&S and environmental requirements
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and enterprise policies and procedures for preparing and using/operating equipment, tools and/or machinery

EVIDENCE GUIDE

	- maintaining a working knowledge of relevant workplace equipment, tools and machinery - working and communicating effectively and positively with others involved in the work - applying, within authority, the requirements of the job or work role in relation to: - selecting the equipment/tools/machinery required for the process - inspecting and checking equipment/tools/machinery prior to use - preparing the equipment/tools/machinery prior to use - using the equipment/tools/machinery to enterprise and manufacturers' standards - completing work area housekeeping requirements - modify activities to cater for variations in workplace context and environment.
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements and procedures may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

OH&S requirements and procedures may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements and procedures may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

RANGE STATEMENT

Job contexts may include:	• Work areas including: • body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture Processes including: • welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Equipment, tools and machinery may include:	• welding equipment • robots • forklift trucks • hand tools • power tools • spray guns • die boxes • furnace • core boxes • lubricating equipment • cutting equipment.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK3003 Monitor and maintain equipment, tools and machinery

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to monitor and maintain equipment, tools and machinery by production employees to ensure optimum use in the production process. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Monitor equipment and processes	1.1. Applicable <i>legislative, OH&S and organisation requirements and procedures</i> relevant to the maintenance requirements in the <i>job context</i> are verified and complied with 1.2. Processes are monitored to ensure that <i>equipment, tools and machinery</i> are operating in accordance with manufacturers' specifications and instructions and organisation procedures 1.3. The operation of equipment, tools and machinery is monitored to ensure they are performing in accordance with job requirements and manufacturer instructions
2. Perform incidental maintenance	2.1. Incidental maintenance is performed on equipment, tools and machinery in accordance with organisation procedures 2.2. Maintenance requirements outside the range expertise/responsibility of the operator are reported to the appropriate personnel, in accordance with organisation procedures
3. Apply preventative maintenance systems/processes	3.1. Preventative maintenance systems or processes are applied in accordance with, and at intervals prescribed by, organisation and manufacturer preventative maintenance policies and procedures 3.2. Equipment, tools and machinery used in the process are checked regularly in accordance with preventative maintenance procedures 3.3. Any identified requirements for adjustment, cleaning, servicing, repair, replacement or modification of equipment, tools and machinery are completed or referred to appropriate personnel in accordance with organisation procedures 3.4. Preventative maintenance activities and resultant action are documented / recorded in accordance with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to refer maintenance problems to appropriate personnel
- apply teamwork to a range of situations, particularly in a production context
- solve problems particularly in teams paying particular attention to safety issues
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- maintenance system documentation/instructions relevant to production employees/operators
- organisation maintenance procedures and techniques for production employees/operators
- types and uses/limitations of common lubricants and applicators to be used in the organisation
- the types, uses, limitations and care of basic servicing tools applicable to the organisation
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislative, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for monitoring and maintaining equipment, tools and machinery • maintaining a working knowledge of current production employee responsibilities for the monitoring and maintenance of equipment, tools and machinery • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • monitoring equipment and processes • performing incidental maintenance on equipment, tools and machinery to organisation requirements • applying authorised preventative maintenance systems and processes • modify activities to cater for variations in workplace context and environment.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment must take place in accordance with the endorsed <i>Assessment Guidelines for the Automotive Industry</i> • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work

EVIDENCE GUIDE	
	practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>Legislative requirements and procedures</i> may include:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and enterprise agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
<i>OH&S requirements and procedures</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective

RANGE STATEMENT	
	equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
Organisation requirements and procedures may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Job context may include:	• Work areas including: • body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture Processes including: • welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Equipment, tools and machinery may include:	• welding equipment • robots • forklift trucks • hand tools • power tools • spray guns • die boxes • furnace • core boxes

RANGE STATEMENT

	• lubrication equipment • cutting equipment sensors.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK4004 Use measuring equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to use, adjust and maintain measuring equipment used in automotive development, service and/or repair. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare measuring equipment	1.1. Applicable <i>organisational requirements</i> relevant to the use of <i>measuring equipment</i> are verified and complied with throughout 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Test needs are identified and the appropriate measuring equipment is selected 1.4. Measuring equipment is checked to ensure that <i>calibration</i> is current and within appropriate tolerances for the task
2. Carry out measurements and calculations	2.1. Measurement is implemented in accordance with organisation procedures and test requirements 2.2. Measurement results are compared with manufacturer/component/test specifications to indicate compliance or non-compliance 2.3. Results are documented with evidence and supporting information and recommendation(s) made 2.4. Report is processed in accordance with organisation procedures
3. Maintain measuring equipment	3.1. Information required for maintenance is accessed from manufacturer/component supplier/designer specifications and correctly interpreted 3.2. Routine maintenance and storage of measuring equipment is carried out in accordance with manufacturer/component supplier/designer specifications 3.3. Checks are completed without causing damage to any component or system 3.4. Organisation documents are processed in accordance with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to obtain information from appropriate sources that may assist in operation of measuring equipment
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to the use of measuring equipment
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of measuring equipment and procedures for their safe use, operation and maintenance
- established communication channels and protocols
- evaluation techniques
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation

EVIDENCE GUIDE	
competency in this unit	policies and procedures for the use of measuring equipment - maintaining a working knowledge of current organisation inventory procedures - working and communicating effectively and positively with others involved in the work - demonstrate/utilisation of a range of workplace tools - applying, within authority, the requirements of the job or work role in relation to: - selecting the appropriate measuring equipment - checking the currency of calibration - measuring in accordance with recognised procedures - achieving work quality goals - completing work area housekeeping requirements, including the documentation of project activity and process outcomes - modify activities to cater for variations in organisation context and environment.
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Measuring equipment may include:

- vernier callipers, inside, inside/outside micrometers, dial gauges, depth gauges, steel rulers, T-squares, straight edges, callipers, dividers, protractors, feeler gauges, ohm meters, volt meters, amp meters, thermometers, pressure gauges, torsion wrenches, gas analysis, laser assisted,
- devices/systems such as interferometers, spectrometers, thermometers, voltmeters, ampermeters, magnometers, bolometers, dynamometers, power meters, gravimeters, oscilloscopes and electronic measuring devices such as accelerometers, load cells, strain gauging and associated data acquisition systems
- measurements may include measurements of length, width, squareness, flatness, angles, roundness, depth, clearances, run out, resistance, current flow, voltage, pressure, temperature, gas composition or any measurement that can be taken from analogue or digital devices, imperial and metric measurement; and be in one of the following areas; physical, analytical instrumentation, optical, electrical or dimensional.

Instructions may include:

- workplace procedures relating to the use and operation of tools and equipment

RANGE STATEMENT

	- departmental requirements - workplace instructions, including job sheets, plans, specifications, drawings and designs - workplace procedures relating to reporting and communications - manufacturers' instructions for the use of equipment and materials.
Calibration may include:	the accuracy of measurement tolerance. This is the degree of accuracy that the measuring equipment can achieve and when it was last checked against a recognised standard of accuracy. Users may maintain an internal standard of measure against which they periodically check the measuring equipment. In any event there are National and International standards which are maintained by independent agencies against which measuring equipment may be tested to ensure that it is within internationally agreed tolerances and so certified.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK4005 Calibrate measuring equipment in automotive development

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to calibrate mechanical/electrical/gas measuring equipment utilised in Automotive Development. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare calibration equipment for testing	1.1. Applicable <i>organisational requirements</i> relevant to the <i>calibration of measuring equipment in automotive development</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i>, plans and/or workplace check sheets are read and interpreted to identify processes and materials to complete work tasks 1.3. Calibration equipment is checked for functional operation 1.4. Appropriate checks are made of components, leads, fasteners etc for wear, loose connections or other faults 1.5. The testing sequence and specified procedures for the tests are determined in accordance with relevant national and international standards and procedures and manufacturers' instructions 1.6. The required certified standards are assembled, checked for currency and readied for the calibration process
2. Calibrate equipment	2.1. Calibration equipment is operated with recognised standard and readings recorded 2.2. Calibration equipment is adjusted in accordance with instructions to adjust reading to standard being measured 2.3. Calibration equipment is re-tested to validate adjusted reading
3. Complete work processes	3.1. Calibration equipment is re-tagged with currency and standard of calibration 3.2. Evidence of wear, unserviceability, malfunction or out-of-tolerance adjustments detected is reported, and any necessary action taken 3.3. Documentation including logs and reports are updated and recorded in accordance with instructions 3.4. Standards are returned to storage/ready-use position

ELEMENT	PERFORMANCE CRITERIA
	3.5. Equipment and tools are cleaned, inspected for serviceable condition and stored at the completion of the process in accordance with organisational procedures 3.6. Work area is cleaned and restored in accordance with organisational procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate with audiences of all varying technical backgrounds
- apply teamwork to a range of situations to achieve efficient processes
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to guidelines for testing sequences and requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- an understanding of the industry/national/international standards structure
- planning for calibration
- evaluation techniques
- types of tools, equipment and procedures for their safe use, operation, maintenance and adjustment of calibration equipment.
- established communication channels and protocols
- problem identification and resolution methods
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for calibration of automotive calibration measuring equipment
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - preparing for calibration
 - performing calibration
 - use of calibration standards
 - preparing reports of results
 - achieving work quality goals
- completing work area housekeeping requirements including the documentation of project activity and process outcomes.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process

EVIDENCE GUIDE

	assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisational requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Calibration of measuring equipment in automotive development may include:

- the use of recognised external standards to insure that measuring equipment is calibrated to reflect those standards when in use. The measuring equipment may include mechanical/electrical/gas measuring equipment used in Automotive Development and may include dynamometers. Standards may include certified organisational, industry, national or international standards.

Instructions may include:

- workplace procedures relating to the use and operation of tools and equipment
- departmental requirements
- workplace instructions, including job sheets, plans,

RANGE STATEMENT

	- specifications, drawings and designs - workplace procedures relating to reporting and communications - manufacturers' instructions for the use of equipment and materials - industry, national and/or international standards.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK4006 Test plant, tooling, equipment, product or systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to prepare, set up and test plant or components thereof, tooling, equipment, product or system in accordance with an industry standard test. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan for the testing of plant or components thereof, tooling, equipment, product or systems	1.1. Applicable <i>organisational requirements</i> relevant to the testing of <i>plant or components thereof, tooling, equipment, product or systems</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i>, plans and/or workplace check sheets are read and interpreted to identify processes and materials to complete work tasks 1.3. Required test equipment and tools are identified, accessed and obtained in accordance with work plans and organisational and <i>inventory procedures</i> 1.4. Testing sequence and specified <i>procedures for the tests</i> are determined in accordance with relevant national and international standards, organisational procedures and manufacturers' instructions
2. Prepare and calibrate testing equipment	2.1. Test equipment and tools are checked to ensure that they are functioning correctly according to operating instructions and/or manuals 2.2. Test equipment is prepared for testing and where necessary, calibration verified in accordance with organisational standards or requirements 2.3. Components to be tested are prepared and connected to the test equipment
3. Conduct tests of components of plant, tooling, equipment, product or systems	3.1. Components are functionally tested or cycled through the prescribed test procedures in accordance with the test specifications 3.2. Evidence of wear, unserviceability, malfunction or out-of-tolerance adjustment is detected and reported, and any necessary action taken
4. Interpret test results of components of plant, tooling, equipment,	4.1. Results of tests are reviewed and interpreted to identify possible causes of malfunction or unserviceability using maintenance records and/or fault diagnosis guides

ELEMENT	PERFORMANCE CRITERIA
product or systems	4.2. Further tests are conducted where required to confirm or refute potential causes of malfunction or unserviceability
5. Initiate corrective action on test results	5.1. Remedial action is implemented where indicated and in accordance with organisational procedures 5.2. Recommendations are documented in accordance with organisational procedures
6. Complete the work processes	6.1. The outcomes of all tests and observations, and any subsequent analysis of detected faults, malfunctions or out-of-tolerance adjustments are reported and recorded in maintenance logs or other records in accordance with organisational procedures 6.2. Test results and recommended actions are reported to relevant personnel for advice and/or approval 6.3. Test documentation is stored and/or distributed in accordance with organisational procedures 6.4. Equipment and tools are cleaned, inspected for serviceable condition and stored at the completion of the process in accordance with organisational procedures 6.5. Work area is cleaned and restored in accordance with organisational procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to deliver information to a variety of audiences of varying technical background
- apply teamwork to a range of situations to overcome problems and enhance performance
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to notify colleagues of test outcomes
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- planning for testing
- preparing and/or calibrating test equipment
- evaluation techniques
- vehicle structures
- visual analysis techniques
- interpreting test results
- operation of systems and components
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for testing components/materials of plant, equipment, product, or systems
- maintaining a working knowledge of current organisation inventory procedures
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role which could include:
 - preparing for tests or trials
 - performing tests or trials

EVIDENCE GUIDE	
	• preparing reports of results • achieving work quality goals • completing work area housekeeping requirements including the documentation of project activity and process outcomes • modify activities to cater for variations in organisation context and environment.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and

RANGE STATEMENT	
	re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
<i>Plant or components thereof, tooling, equipment, product or systems</i> may include:	• components of plant, tooling, equipment, product and or systems used in the manufacturing or testing process. Within this context product is further defined as a component, sub-component or material of a passenger motor vehicle. Plant, tooling, equipment and systems are further defined as components or sub-components of the plant, tooling, materials or systems of the testing or manufacturing infrastructure/resources.
<i>Instructions</i> may include:	• workplace procedures relating to the use and operation of tools and equipment • departmental requirements • workplace instructions, including job sheets, plans, specifications, drawings and designs • workplace procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials.
<i>Inventory procedures</i> may include:	• automatic or demand driven ordering and replenishment, central or local storage and maintenance procedures and systems and supply or demand driven disposal processes.
<i>Procedures for the tests</i> may include:	• tests to establish compliance with a standard, such as an ADR standard, or to establish performance limits of product/materials or test/production plant/tooling/equipment/materials/ systems. Tests are generally predetermined.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK4007 Install plant, equipment or systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to install plant, equipment or systems required for the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret installation plan	1.1. Applicable <i>OHS</i> and <i>organisational requirements</i> relevant to the <i>installation of plant, equipment or systems</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Installation plan is interpreted in terms of the sequence and timing of activities, and action plan is initiated 1.4. The proposed installation is discussed with designated staff to establish suitable times for the work to be conducted 1.5. Arrangements are made for staffing to be available and/or contracted 1.6. Arrangements are made for physical resources to be available and/or purchased/leased
2. Obtain component parts, plant and/or equipment	2.1. Supply arrangements of all component parts, plant and/or equipment are confirmed or arranged 2.2. Arrangements are made for the delivery of all component parts, plant and/or equipment to the required locations on the specified dates in accordance with the installation plan 2.3. Where necessary, arrangements are made for the storage of component parts, plant and/or equipment in accordance with the installation plan
3. Prepare the work site	3.1. Presentations required for the work site are interpreted from the design drawings and documentation 3.2. Work site is prepared in accordance with the installation plan and the requirements of the manufacturer of the component parts, plant and/or equipment and OHS policies and procedures 3.3. Prepared work site is checked for the compliance with the design drawings and specifications, and any necessary adjustments made
4. Conduct installation of parts equipment, fixtures and/or extra low voltage	4.1. All parts, equipment, fixtures and/or extra low voltage wiring to be used in the installation are checked to ensure that they meet the specified technical and safety

ELEMENT	PERFORMANCE CRITERIA
wiring	requirements 4.2. Any necessary pre-installation preparation of parts, plant, equipment, fixtures and/or extra low voltage wiring is carried out in accordance with the installation plan and the technical specifications for the work 4.3. Installation of the parts, plant, equipment, fixtures and/or extra low voltage wiring is carried out
5. Verify installation	5.1. Installation is checked against the design specifications, organisational quality standards, manufacturer instructions and OHS requirements 5.2. Where the installation does not meet the specified requirements, the problem is reported and any necessary action taken 5.3. Outcomes of the checks of the installation and any resulting action are documented

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to ensure worksite safety and compliance
- apply teamwork to a range of situations to complete work tasks on time to required standards
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to the installation of pieces of plant or equipment
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- methods for conducting the installation of parts, equipment, fixtures and/or extra low voltage wiring
- operation of systems and components

REQUIRED SKILLS AND KNOWLEDGE

- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for installing plant, equipment or systems
- maintaining a working knowledge of current organisation inventory procedures
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - Installing plant, equipment and/or systems effectively
 - preparing for verification of installation
 - performing tests or trials
 - preparing reports of results
 - achieving work quality goals
 - completing work area housekeeping requirements including the documentation of project activity and process outcomes
- modify activities to cater for variations in organisation context and environment.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using

EVIDENCE GUIDE

	tools/equipment/machinery required for the production process without undue disruption to the production process assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Organisation requirements</i> may include:	- access and equity principles and practices - environmental management (waste disposal, recycling and re-use guidelines) - emergency and evacuation procedures

RANGE STATEMENT

	• equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Installation of plant, equipment or systems may include:	• plant • equipment • systems or components thereof, required in the automotive development/ manufacturing industry.
Instructions may include:	• workplace procedures relating to the use and operation of tools and equipment • departmental requirements • workplace instructions, including job sheets, plans, specifications, drawings and designs • workplace procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials.
Installation is checked may include:	• tests to ensure the correct operation of plant, equipment, system and/or components. Tests are conducted in accordance with manufacturers' specifications, industry standards and may include tests to establish compliance with relative industry standards or to establish performance limits of plant/ equipment/systems. Tests are generally predetermined.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK4008 Maintain plant, tooling, equipment or systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to maintain and service plant, tooling, equipment or systems required for the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop preventative and remedial maintenance plans for plant, tooling, equipment or systems	1.1. Applicable <i>organisational requirements</i> relevant to the <i>maintenance of plant, tooling, equipment or systems</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i>, plans and/or workplace check sheets are read and interpreted to identify processes and materials to complete work tasks 1.3. Plant/tooling/equipment or system to be maintained is identified 1.4. <i>Preventative maintenance</i> requirements are identified from manufacturer recommendations and an analysis of the operational performance and maintenance history of the actual, or similar, plant, tooling, equipment or systems is made 1.5. Preventative maintenance plans, schedules and procedures are developed, based on the analysis of preventative maintenance requirements 1.6. Documentation for periodic schedules of preventative maintenance are prepared 1.7. Remedial maintenance plans for emergency breakdown situations are developed in cooperation with production and engineering staff and submitted for the approval of appropriate personnel 1.8. Approved preventative and remedial maintenance plans are distributed to appropriate personnel
2. Control and coordinate maintenance operations	2.1. Relevant production and maintenance staff are made aware of approved preventative and remedial maintenance plans and are trained in the necessary procedures 2.2. Preventative and remedial maintenance operations are monitored against the approved plans and corrective action taken where procedures are not being correctly followed 2.3. Preventative and remedial maintenance plans and related

ELEMENT	PERFORMANCE CRITERIA
	documentation are reviewed periodically in conjunction with production and maintenance staff 2.4. Reports and summaries of maintenance operations are prepared
3. Conduct preventative maintenance procedures on plant, tooling, equipment or systems	3.1. Preventative maintenance is conducted in conjunction with production staff in accordance with prescribed preventative maintenance policies and procedures 3.2. Relevant parts of plant, tooling, equipment or systems are visually or physically checked for signs of deformation, wear, defects or damage 3.3. Relevant parts of plant, tooling, equipment or systems are functionally checked for correct performance 3.4. Identified requirements for adjustment, cleaning, repair, replacement, or modification of plant, tooling, equipment or systems are reported to appropriate personnel and action taken 3.5. Patterns of maintenance requirements of the plant, tooling, equipment or systems identified during the course of routine preventative maintenance are reported and, where appropriate, recommendations made to appropriate personnel of suggested changes to preventative maintenance schedules and/or procedures 3.6. Preventative maintenance activities and resultant action are documented
4. Monitor performance of plant, tooling, equipment and systems	4.1. Critical performance measures/observations of the operation of plant, tooling, equipment and/or systems are taken in conjunction with production staff and recorded 4.2. Recorded performance measures/observations are compared against allowable tolerance levels and out-of-tolerance measures/observations, then noted and reported for further investigation
5. Conduct adjustments to service of plant, tooling, equipment or systems	5.1. Checks and adjustments are made to plant, tooling, equipment and/or systems 5.2. Greasing, lubrication and other regular servicing of plant, tooling, equipment or systems is carried out to organisational or manufacturer requirements 5.3. Adjustments and/or servicing of plant, tooling, equipment or systems are documented
6. Document maintenance procedures and outcomes	6.1. Routine, emergency and preventative maintenance activities are documented 6.2. Performance measures, critical deviations from the norm and any follow-up action taken in respect of the operations

ELEMENT	PERFORMANCE CRITERIA
	of plant, tooling, equipment or systems are documented 6.3. Defects, worn parts and equipment or malfunctioning plant, tooling, equipment or system detected during the course of maintenance and service activities are reported and any necessary action initiated

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate the condition of tools and equipment
- apply teamwork to a range of situations, including the servicing of systems
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure tools and equipment are maintained to required levels of functionality
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- interpreting performance results
- operation of systems and components
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- Compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for maintaining of plant, tooling, equipment, product, or systems
- Maintaining a working knowledge of current organisation inventory procedures
- Working and communicating effectively and positively with others involved in the work
- Applying, within authority, the requirements of the job or work role in relation to:
 - maintaining plant, tooling, equipment and/or systems effectively
 - preparing reports of results
 - achieving work quality goals
 - completing work area housekeeping requirements including the documentation of project activity and process outcomes.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process

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	assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisational requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Maintenance of plant, tooling, equipment or systems may include:

the preventative and remedial maintenance of plant or components thereof, tooling, equipment or systems, which are required in the design, development and production of motor vehicles.

Instructions may include:

- organisation procedures relating to the use and operation of tools and equipment
- departmental requirements
- organisation instructions, including job sheets, plans, specifications, drawings and designs
- organisation procedures relating to reporting and communications

RANGE STATEMENT	
	manufacturers' instructions for the use of equipment and materials.
<i>Preventative maintenance</i> may include:	the maintenance undertaken daily, weekly, monthly, annual or on other schedules, designed to provide regular systematic inspection and servicing thereby facilitating reliable operation.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK4009 Repair plant, tooling, equipment or systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the required skills and knowledge to repair plant, tooling, equipment or systems required for the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify faulty plant, tooling, equipment or systems	1.1. Applicable <i>OHS</i> and <i>organisation requirements</i> relevant to the repair of plant, tooling, equipment or systems are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Reported defects and malfunctions or out-of-tolerance performance of plant, tooling, equipment or systems are investigated and potential faults identified 1.4. Parts, plant, tooling, equipment and systems are visually inspected and/or operated through specified test procedures to establish serviceability or to confirm defects in accordance with prescribed requirements 1.5. Faulty plant, tooling, equipment and systems are identified and the nature of the fault confirmed, reported and documented 1.6. An action plan/flow chart for the removal and/or repair and replacement of the faulty plant, tooling, equipment or system is developed in conjunction with the relevant production and maintenance staff
2. Remove faulty plant, tooling, equipment or systems	2.1. If necessary, the faulty plant, tooling, equipment or system is removed in accordance with the agreed action plan and organisational procedures 2.2. Where required, temporary replacement of the faulty plant, tooling equipment or system is made pending repair and/or permanent replacement 2.3. The faulty plant, tooling, equipment or system is transported to the repair area using appropriate materials handling equipment
3. Diagnose faults in plant, tooling, equipment or systems	3.1. Available information from maintenance records and test results is used, where necessary, to assist in fault determination 3.2. Available fault diagnosis guides are used, where appropriate, to assist in the determination of faults 3.3. Faults are located, causes identified and fault rectification

ELEMENT	PERFORMANCE CRITERIA
	requirements determined to assist in planning the repair 3.4. Specialist advice is obtained, where necessary, to assist with, or confirm, the fault rectification strategy
4. Repair faults in plant, tooling, equipment or systems	4.1. In accordance with the repair strategy, faulty plant, tooling and equipment or systems are dismantled 4.2. Component parts are assessed for wear and serviceability 4.3. Repair methodology is determined 4.4. Parts requiring specialist repair are tagged, and repair instructions are accurately specified and entered on a database in accordance with organisational procedures 4.5. Component parts are repaired, modified and/or replaced 4.6. Plant, tooling and equipment are assembled
5. Reinstall plant, tooling, equipment and systems	5.1. A plan for the re-installation of new or repaired plant, tooling, equipment or systems is developed in conjunction with the relevant production staff 5.2. New or repaired plant, tooling, equipment or system is re-installed 5.3. Installed new or repaired plant, tooling and equipment is visually checked to ensure it is correctly fitted
6. Calibrate, adjust and/or test plant, tooling, equipment or systems	6.1. Installed new or repaired plant, tooling and equipment is calibration verified, adjusted and/or tested through its operational cycle 6.2. Details of the repair, the results of re-commissioning tests and the confirmation of serviceability are documented

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate the condition of repaired items and systems
- apply teamwork to a range of situations, including the reinstallation of plant, tooling, equipment and systems
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and

REQUIRED SKILLS AND KNOWLEDGE

instructions, particularly to ensure adherence to OHS and organisation requirements

- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- methods of preparing and/or calibrating equipment
- interpreting performance results
- operation of systems and components
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe work practices and organisation policies and procedures for the repair of plant, tooling, equipment, product, or systems
- maintaining a working knowledge of current organisation inventory procedures
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
- repairing plant, tooling, equipment and/or systems effectively

EVIDENCE GUIDE	
	• preparing reports of results • achieving work quality goals • completing work area housekeeping requirements including the documentation of project activity and process outcomes
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and

RANGE STATEMENT	
	elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Instructions may include:	• organisation procedures relating to the use and operation of tools and equipment • departmental requirements • organisation instructions, including job sheets, plans, specifications, drawings and designs • organisation procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK4010 Manufacture or modify plant, tooling, equipment or systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to manufacture or modify plant, tooling, equipment or systems required for the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan manufacture or modification of plant, tooling, equipment or systems	1.1. Applicable <i>OHS</i> and <i>organisation requirements</i> relevant to the manufacture or modification of plant, tooling, equipment or systems are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Requirements of the client for manufacture of, or modification to plant, tooling, equipment and/or systems are assessed/re-checked in conjunction with engineering staff 1.4. Approval is sought for the planned manufacture or modifications in accordance with organisational requirements and any necessary changes made 1.5. Steps involved in the manufacture of, or modifications to plant, tooling, equipment and/or systems are identified in consultation with designated staff 1.6. An inventory of required equipment, parts and components is established in accordance with organisational procedures, including an assessment of their current availability or the need to either manufacture, purchase or lease them. 1.7. Fabrication/machining processes and instructions are determined and clarified with participating departments/sections/areas 1.8. Timetable, budget, resource requirements, staffing and purchase/supply schedule for the modification of plant, tooling, equipment and/or systems are drawn up and confirmed in consultation with designated staff 1.9. Approved plan is communicated to all relevant staff in management, production, engineering and other sections of the organisation concerned
2. Make parts for plant, tooling, equipment or	2.1. Specifications for parts are interpreted to determine the dimensions and processes for manufacture or modification

ELEMENT	PERFORMANCE CRITERIA
systems	2.2. Required raw materials, tools, equipment and assembly or fabrication jigs or fixtures are selected and prepared for the particular specification requirements 2.3. Components or parts are manufactured or modified in accordance with the required specifications 2.4. Test equipment and rigs are used, where applicable, to confirm serviceability of finished tools, jigs or fixtures 2.5. Completed parts are tagged, sealed and/or packaged as required and dispatched to the store or assembly area
3. Manufacture or modify tools, jigs and/or fixtures	3.1. Specifications for modifications of tools, jigs and/or fixtures are interpreted to determine the dimensions and processes for manufacture or modification 3.2. Required raw materials, tools, equipment and assembly or fabrication jigs are selected and prepared for the particular specification requirements 3.3. Modifications are conducted in accordance with the required specifications 3.4. Test equipment and rigs are used, where applicable, to confirm serviceability of finished tools, jigs or fixtures 3.5. Completed tools, jigs or fixtures are tagged, sealed and/or packaged as required and despatched to the store or relevant production area
4. Cast, fabricate, machine, assemble and/or wire modified plant, tooling, equipment or systems	4.1. Specifications for manufactured or modified plant, tooling, equipment and/or systems are interpreted to determine the dimensions and processes for manufacture or modification 4.2. Required raw materials, parts, sub-assemblies, tools, equipment and assembly or fabrication jigs are selected and prepared for the particular specification requirements 4.3. Plant, tooling and equipment is cast, fabricated, machined, assembled and/or wired
5. Check/test manufactured or modified plant, tooling, equipment and/or systems	5.1. Test equipment and rigs are used, where applicable, to confirm serviceability of manufacture or modified plant, tooling and equipment 5.2. Completed plant, tooling and equipment is tagged, sealed and/or packaged as required and dispatched to the store or production area
6. Document manufacture or modifications to plant, tooling, equipment or systems	6.1. Manufacturing details or modifications to the plant, tooling and equipment are documented 6.2. Documentation is stored and/or distributed to required personnel

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to seek approval from appropriate personnel to manufacture or modify equipment
- apply teamwork to a range of situations including the making of parts for plant, tooling, equipment or systems
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure manufacturing details and modifications to existing equipment and systems are documented in accordance with organisation requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- methods of preparing and/or calibrating equipment
- interpreting performance results
- operation of systems and components
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

EVIDENCE GUIDE	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for manufacturing or modifying of plant, tooling, equipment, product, or systems • maintaining a working knowledge of current organisation inventory procedures • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • manufacturing or modifying of plant, tooling, equipment and/or systems effectively • preparing reports of results • achieving work quality goals • completing work area housekeeping requirements including the documentation of project activity and process outcomes
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Instructions may include:

- workplace procedures relating to the use and operation of tools and equipment
- departmental requirements
- organisation instructions, including job sheets, plans, specifications, drawings and designs
- workplace procedures relating to reporting and communications
- manufacturers' instructions for the use of equipment and materials.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATK4011 Interpret manuals, drawings and circuits for plant, tooling, equipment or systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to interpret manuals, drawings and/or circuits for plant, tooling, equipment or systems required for the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and access manuals, drawings, circuits or specifications of plant, tooling, equipment or system	1.1. Applicable <i>organisation requirements</i> relevant to interpret manuals, drawings and/or circuits are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Appropriate manuals, drawings, circuits and/or specifications are identified and accessed for the plant, tooling, equipment or systems to be maintained 1.4. Amendment status of the drawings and documentation is clearly established to ensure correct specifications and procedures are applied
2. Interpret manuals, drawings, circuit or specifications of plant, tooling, equipment or systems	2.1. Relevant sections/chapters of manuals, drawings, circuits and/or specifications of plant, tooling, equipment or systems are located in relation to the work to be carried out 2.2. Information is interpreted and procedures to be followed are accurately determined
3. Apply information in manuals, drawings, circuits or specifications of plant, tooling, equipment or systems	3.1. Work is performed in accordance with manual or specified procedures and the information provided in relevant sections of drawings, circuits and schematics 3.2. Correct sequencing and adjustments are carried out in accordance with the information provided in manufacturer manuals and/or specifications for the plant, tooling, equipment or systems to be maintained
4. Store manuals, drawings, circuits or specifications of plant, tooling, equipment or systems	4.1. Manuals, drawings, circuits, schematics and/or specifications of plant, tooling, equipment or systems are stored appropriately to ensure prevention of damage, ready access and updating of information

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate procedures to appropriate personnel
- apply teamwork to a range of situations, including to the sequencing and adjusting of equipment and systems
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure all sequencing and adjustments are carried out according to specification
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- identifying, accessing and interpreting manuals, drawings, circuits or specifications of plant, tooling, equipment or systems
- operation of systems and components
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- interpreting and applying quality standards
- procedures for the recording, reporting and maintenance of organisation records and information

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

EVIDENCE GUIDE	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • Compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures • Working and communicating effectively and positively with others involved in the work • Applying, within authority, the requirements of the job or work role in relation to: • interpreting manuals, drawings and/or circuits for plant, tooling, equipment or systems • achieving work quality goals • completing work area housekeeping requirements including the documentation of project activity and process outcomes
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Instructions may include:

- workplace procedures relating to the use and operation of tools and equipment
- departmental requirements
- workplace instructions, including job sheets, plans, specifications, drawings and designs
- workplace procedures relating to reporting and communications
- manufacturers' instructions for the use of equipment and materials.

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATN3001 Conduct structural rectification of vehicle bodies

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to inspect, assess and repair structural faults to vehicle bodies or components. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with <i>appropriate personnel</i> and applied 1.3. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use
2. Assess structural fault/defect	2.1. Vehicle bodies/components are inspected to confirm the extent and nature of the structural fault or defect 2.2. Faults or defects found are assessed for remedial action and on-line or off-line solutions 2.3. Solution to repair the fault or defect is selected and planned
3. Prepare for rectification	3.1. Drawings or sketches are produced to plan and organise the rectification process 3.2. Plans/drawings for rectification are presented to appropriate personnel for approval 3.3. Equipment or tools to complete the rectification are selected
4. Repair fault/defect	4.1. Faulty welds, connectors or defective areas are cut or ground in preparation for new welding or connectors 4.2. Rectification of structural fault or defect is performed with application of new connectors or re-welding 4.3. Faulty or defective area is finished to specifications 4.4. Documentation is completed outlining nature of problem, work conducted and outcome, in accordance with organisation requirements 4.5. Repaired vehicle/components are processed for inspection and returned to the production sequence
5. Clean up	5.1. Work area is cleared and materials disposed of, reused or

ELEMENT	PERFORMANCE CRITERIA
	recycled in accordance with organisation requirements and cost reduction initiatives 5.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to present rectification plans for approval to appropriate personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure cutting, grinding and welding activities adhere to OHS requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant organisation production quality standards
- automotive industry terminology
- organisation manufacturing and production techniques for vehicle metal components
- tools and equipment types, characteristics, uses and limitations
- metal properties and workability limitations
- structural faults and defects
- structural fault repair techniques
- processes for the calculation of material requirements
- material Safety Data Sheets
- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian Standards.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • location, interpretation and application of relevant information, standards and specifications • compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations • compliance with organisation policies and procedures including quality requirements • safe and effective operational use of tools and equipment • communication and working effectively and safely with others • application of hot test procedures to correctly identify a minimum of 5 different and significant nonconforming engines, which must include faults identified using both computer/keypad aided systems and manual/sensory capabilities.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions

EVIDENCE GUIDE

	(real or simulated) and require evidence of process assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Organisation requirements</i> may include:	- access and equity principles and practices - environmental management (waste disposal, recycling and re-use guidelines) - emergency and evacuation procedures - equipment use procedures - ethical standards - legal obligations - maintenance and storage procedures - organisational and site guidelines - policies and procedures relating to own role and responsibility - procedural manuals - quality assurance guidelines - quality and continuous improvement processes and standards - recording and reporting guidelines.
<i>Appropriate personnel</i> may include:	- clients and managers - supervisors - suppliers

RANGE STATEMENT	
	• team leaders • team members.
<i>Cost reduction initiatives</i> may include:	• continuous improvement programs • cost benchmarks • power conservation • productivity achievement • waste avoidance.

Unit Sector(s)

Unit sector	Technical - Body

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATP3001 Rectify paintwork

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to assess and repair paintwork on vehicle bodies and parts as a result of manufacturing and production line damage or defective painting procedures. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with <i>appropriate personnel</i> and applied 1.3. Tools and equipment selected are consistent with the requirements of the job, checked for serviceability and faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use
2. Assess paintwork damage/defect	2.1. Vehicle bodies/parts are inspected to confirm the extent and nature of paintwork damage or defects 2.2. Damaged or defective paintwork is analysed and assessed 2.3. Solution to repair the damage or defect is selected and planned
3. Repair paintwork damage/defect	3.1. Damaged or defective area is prepared for repair 3.2. Adjoining areas to the damaged/defective area are protected from the repair work procedures 3.3. Paint repair equipment and materials are selected and applied to damaged/defective areas 3.4. Drying method is selected and applied 3.5. Damaged or defective area is repaired to specifications 3.6. Documentation is completed outlining nature of problem, work conducted and outcome, in accordance with organisation requirements 3.7. Repaired vehicle is processed for inspection and returned to production sequence
4. Clean up	4.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and

ELEMENT	PERFORMANCE CRITERIA
	<i>cost reduction initiatives</i> 4.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed work stages
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure documentation is properly completed
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- organisation and equipment safety requirements
- organisation production quality standards
- automotive industry terminology
- manufacturing and production procedures
- techniques for vehicle painting
- tools and equipment types, characteristics, uses and limitations
- paint viscosity and limitations
- paint damage and defects
- paint repair techniques and equipment
- processes for the calculation of material requirements
- material Safety Data Sheets
- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian standards.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations
- Compliance with organisation policies and procedures including quality requirements
- Safe and effective operational use of tools and equipment
- Communication and working effectively and safely with others
- Completion of analysis, assessment and rectification of at least 2 separate and different paint damage incidents and a minimum of 3 separate and different paint defects, to specifications and organisation inspection requirements.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

- A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:
- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
 - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
 - assessment may be applied under project related conditions (real or simulated) and require evidence of process
 - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Cost reduction initiatives may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Unit Sector(s)

Unit sector	Technical - Paint

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATP3002 Control paint line production processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to control paint line production processes and to avoid vehicle painting inconsistencies. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with <i>appropriate personnel</i> and applied 1.3. Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared and located ready for use
2. Assess paint line flow	2.1. Paint line sterile environment is monitored and maintained 2.2. Flow of paint lines is checked for inconsistencies 2.3. Paint arriving from the supplier is checked for batch accuracy and viscosity prior to adding to the paint line 2.4. Paint viscosity is regularly checked for consistency 2.5. Forward planning of paint supply and production requirements is monitored to ensure steady flow or smooth transition to next colour.
3. Remedy paint line production problems	3.1. Production line problems are assessed and cause identified 3.2. Cause of problem is analysed and rectified 3.3. Paint line procedures are reassessed to ensure identified problems are remedied and avoided in future production line procedures 3.4. Documentation is completed outlining nature of problem, work conducted and outcome, in accordance with organisation requirements.
4. Clean up	4.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and <i>cost reduction initiatives</i> 4.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate identified faults and strategies for rectification in paint line production to appropriate personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure the disposal of paint materials conforms to environmental and waste avoidance requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant enterprise production quality standards
- enterprise manufacturing and production techniques for vehicle painting
- automotive industry terminology
- tools and equipment types, characteristics, uses and limitations
- paint viscosity and limitations
- paint line systems
- paint line control techniques
- processes for the calculation of material requirements
- material Safety Data Sheets
- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- enterprise safety policies and procedures
- relevant Australian Standards.

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- location, interpretation and application of relevant information, standards and specifications
- compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations
- compliance with organisation policies and procedures including quality requirements
- safe and effective operational use of tools and equipment
- communication and working effectively and safely with others
- completion of a paint line assessment including entry of a new batch of same colour paint and assessment of a changeover to a new colour
- rectification of at least two different paint line faults including all organisation documentation and reporting requirements.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

- A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:
- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
 - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
 - assessment may be applied under project related conditions (real or simulated) and require evidence of process
 - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Cost reduction initiatives may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Unit Sector(s)

Unit sector	Technical - Paint

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATR3001 Rectify electrical faults on assembled vehicles

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to rectify electrical faults based on recommendations from the inspection records and report of the fully assembled vehicle. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with <i>appropriate personnel</i> and applied 1.3. Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use
2. Diagnose and rectify electrical fault	2.1. Final report is interpreted and fault located 2.2. Fault is diagnosed and suitable method of correction is planned 2.3. Rectification is applied in accordance with engineering specifications 2.4. Fault is re-diagnosed to assess outcome of rectification and to ensure rework has eliminated the fault, and any final adjustments are made 2.5. Documentation is completed outlining nature of problem, work conducted and outcome, in accordance with organisation requirements 2.6. Vehicle is returned to production line
3. Clean up and report	3.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and <i>cost reduction initiatives</i> 3.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of identified faults and appropriate methods of correction
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure OHS requirements are adhered to during electrical rectification procedures
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant organisation production quality standards
- manufacturing and production techniques for electrical components and systems
- automotive industry terminology
- tools and equipment types, characteristics, uses and limitations
- vehicle electrical systems
- electrical faults and symptoms
- electrical diagnosis techniques
- processes for the calculation of material requirements
- material Safety Data Sheets
- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian Standards.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

EVIDENCE GUIDE	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • location, interpretation and application of relevant information, standards and specifications • compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations • compliance with organisation policies and procedures including quality requirements • safe and effective operational use of tools and equipment • communication and working effectively and safely with others • completion of diagnosis and rectification of electrical faults on a minimum of five (5) separate vehicles each with different faults, rectified to engineers specifications and organisation inspection requirements.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Cost reduction initiatives may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Unit Sector(s)

Unit sector	Technical - Electrical and Electronic

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATR4002 Use sensors to acquire motor vehicle data for development purposes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to install, adjust and maintain sensors and signal transmitters used in automotive development to gather data for research purposes. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify appropriate sensors, transmitters and final control elements	1.1. Applicable <i>organisational requirements</i> relevant to the use of <i>sensors, signal transmitters and final control elements</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Specification requirements from data sheets, circuit diagrams and/or engineering drawings are determined 1.4. Sensors, transmitters and final control elements are selected 1.5. Installation is planned
2. Install instrumentation sensors, transmitters and final control elements	2.1. Equipment is prepared for installation 2.2. Equipment is installed 2.3. Test is setup for correct <i>calibration</i> , operation and data feed
3. Maintain, diagnose sensors, transmitters and final control elements	3.1. Preventative maintenance schedules are implemented 3.2. Periodic tests to ensure continued integrity of data are undertaken 3.3. View sample data periodically for obvious irregularities or unexplained aberrations 3.4. Irregularities and aberrations are documented and reported with explanations where possible
4. Complete fault documentation and plan corrective action	4.1. Operation of sensors, transmitters and final control elements are monitored and assessed against predetermined specification or manufacturers' technical data 4.2. Fault conditions are identified, localised and monitored 4.3. Faults are documented and reported
5. Restore equipment and finalise housekeeping	5.1. Equipment is recovered, checked for serviceability and calibration 5.2. Serviceable equipment is returned to store for future use 5.3. Unserviceable equipment is sent for repair or disposal in accordance with organisation policy

ELEMENT	PERFORMANCE CRITERIA
	5.4.Documentation is finalised and test is reported

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate with others the data required for development purposes
- apply teamwork to a range of situations to achieve mutual goals and outcomes
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ...
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of sensors, signal transmitters and final control elements and procedures for their safe use, operation and maintenance
- evaluation techniques
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment

EVIDENCE GUIDE

Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for use of sensors, signal transmitters and final control units
- maintaining a working knowledge of current organisation inventory procedures
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - selecting the appropriate equipment
 - checking the currency of calibration
 - measuring in accordance with recognised procedures
 - achieving work quality goals
 - completing work area housekeeping requirements including the documentation of project activity and process outcomes
- modify activities to cater for variations in organisation context and environment.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that

EVIDENCE GUIDE

	competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Sensors, signal transmitters and final control elements may include:

- manometers
- dead weight testers
- vacuum systems
- power supplies
- control valve test beds
- pneumatic
- analogue
- digital
- test and calibration equipment
- utilised for maintenance
- calibration and testing of process signal converters

RANGE STATEMENT

	• final control elements.
Instructions may include:	• workplace procedures relating to the use and operation of tools and equipment • departmental requirements • organisation instructions, including job sheets, plans, specifications, drawings and designs • workplace procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials.
Calibration may include:	• refers to the tolerance accuracy of measurement. This is the degree of accuracy that the measuring equipment can achieve and when it was last checked against a recognised standard of accuracy. Users may maintain an internal standard of measure against which they periodically check the measuring equipment. In any event there are National and International standards which are maintained by independent agencies against which measuring equipment may be tested to ensure that it is within internationally agreed tolerances and so certified.

Unit Sector(s)

Unit sector	Technical - Electrical and Electronic

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATS2001 Stamp and press parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to use cutting equipment to safely and efficiently cut blanks, fabricate formed parts and maintain the dies. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Cut blanks to size	1.1. Materials list is read and interpreted, and the correct material for the job selected in accordance with organisation requirements 1.2. Materials are cleaned to remove surface impurities 1.3. Cutting equipment is set and adjusted to specifications to minimize waste 1.4. Blanks are cut to specification using appropriate tools and cutting equipment 1.5. Blanks are sorted and recorded for identified press production purposes 1.6. Blanks are stacked in/on the appropriate containers/pallets for transportation
2. Fabricate formed parts	2.1. Materials list is read and interpreted to select and load blanks 2.2. Specified amount of the correct lubricant is applied to the blank 2.3. Waste is minimised by aligning the blank to specified press points on the die bed 2.4. Formed parts are pressed to specification using the appropriate press equipment 2.5. Formed parts are unloaded from press equipment and checked for specification and quality 2.6. Faulty parts are marked and recorded according to organisation procedures 2.7. Workflow and production schedule are recorded and maintained
3. Maintain/changeover dies	3.1. Die surfaces are steam cleaned and inspected for defects and conformity 3.2. Damaged dies are marked for repair or disposal and appropriate personnel notified

ELEMENT	PERFORMANCE CRITERIA
	3.3. Undamaged dies are coated/covered to protect their surfaces and stored in designated areas 3.4. Dies are pre-built on outside bolsters fitted to organisation specifications 3.5. Die is removed/fitted in the sequence shown in the press set up specifications and aligned 3.6. Press is tested by producing part samples which are checked against specification

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform appropriate personnel of damaged dies
- apply teamwork to a range of situations, including the transportation of blanks
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure appropriate materials are selected for the job
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- organisation cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- types of cutting equipment and application

REQUIRED SKILLS AND KNOWLEDGE

- procedures for the safe and efficient production of blanks with minimum waste
- organisation production schedules
- quality standards and faulty parts
- company of work flow records - written / electronic
- identification of faulty parts
- maintenance procedures for dies

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- use cutting equipment safely and efficiently to produce blanks with minimum waste
- produce formed parts to meet the production schedule
- limit the number of faulty parts to less than quality standards
- produce work flow records
- identify and mark faulty parts

EVIDENCE GUIDE	
	• maintain dies in effective condition • identify and deal with faulty dies • apply company OH&S policy and procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>Materials</i> may include:	• coils of steel • sheets of steel • uncut blanks.
<i>Organisation requirements</i>	• access and equity principles and practices • environmental management (waste disposal, recycling and

RANGE STATEMENT	
may include:	- re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
<i>Cutting equipment</i> may include:	• guillotines • shear presses • metal punches.
<i>Blanks may be cut by::</i>	• hitch • roller feed • guillotine.
<i>Transportation</i> may include:	• use of cranes • hoists • tow motors • trolleys.
<i>Steam cleaned</i> may include the use of:	• solvent • washes • detergents • steam cleaners.
<i>Conformity</i> may include:	• size • shape • tolerances • critical measurements.
<i>Appropriate personnel</i> may include:	• clients and managers • supervisors • suppliers • team leaders • team members.

Unit Sector(s)

Unit sector	Technical - Fabrication

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATW3001 Test welds ultrasonically

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to inspect, analyse and assess welds on vehicle bodies or components using ultrasonic testing equipment. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with <i>appropriate personnel</i> and applied 1.3. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use
2. Analyse and test welds	2.1. Specified welds from various parts of the vehicle body and components are identified and selected 2.2. Welds are visually inspected, analysed and findings recorded 2.3. Welds are tested with ultrasonic equipment 2.4. Weld breaking points are established and tested with ultrasonic equipment 2.5. Testing sequence is repeated on multiple weld samples 2.6. Results of all tests are recorded and reported in accordance with organisation requirements
3. Clean up	3.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and <i>cost reduction initiatives</i> 3.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to report test results to appropriate personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure correct use of ultrasound equipment during testing procedures
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant organisation production quality standards
- automotive industry terminology
- organisation manufacturing and production techniques for vehicle metal components
- tools and equipment types, characteristics, uses and limitations
- metal properties and workability limitations
- weld structures and technology
- ultrasonic testing procedures
- processes for the calculation of tensile strength
- material Safety Data Sheets
- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian Standards.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

EVIDENCE GUIDE**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- location, interpretation and application of relevant information, standards and specifications
- compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations
- compliance with organisation policies and procedures including quality requirements
- safe and effective operational use of tools and equipment
- communication and working effectively and safely with others
- inspection, analysis, assessment and testing of a minimum of 30 welds to specifications and organisation inspection requirements.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Cost reduction initiatives may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Unit Sector(s)

Unit sector	Technical - Welding, Grinding, Machining and Soldering

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.

AUMATW4002 Conduct welding inspection

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to prepare and perform welding inspection procedures for the Truck/Bus/Trailer Manufacture and Assembly industry. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for welding inspections	1.1. All activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work requirements are identified and clarified/confirmed with <i>appropriate personnel</i> 1.3. Responsibilities and duties are identified 1.4. Material and consumable composition is confirmed in accordance with job requirements 1.5. The inspection sequence is planned in accordance with organisation work practices
2. Conduct welding inspection	2.1. Welding and quality assurance procedures and requirements for <i>non destructive testing</i> and inspection are established and validated 2.2. Welding progress is monitored to ensure industry and organisation procedures are met 2.3. Deviations from procedures are identified and appropriate actions taken 2.4. Test results are analysed, documented and verified in accordance with prescribed procedures 2.5. Weld test results, test procedure analysis and recommendations for action and procedural changes are reported in accordance with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of job responsibilities and duties identified in the planning process

REQUIRED SKILLS AND KNOWLEDGE

- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure required actions and changes are recommended through appropriate channels
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- welding standards
- inspection techniques and procedures
- welding and material preparation techniques for the particular type of welding operation
- distortion control techniques
- weld testing techniques (non-destructive)
- mechanical properties of welded joints.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards,

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required to demonstrate competency in this unit	codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • prepare and plan for inspection and testing • verify the calibration of test equipment • identify deviations from work requirements • develop and report recommendations - verbal, written, electronic • complete work procedures - paper based / electronic • employ organisation OHS policies and procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular

EVIDENCE GUIDE

	circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Non destructive testing

- dye penetrant

RANGE STATEMENT

may include:

- magnetic particle
- thickness testing
- radiographic
- visual
- ultrasonic
- pressure tests cost benchmarks.

Unit Sector(s)**Unit sector**

Technical - Welding, Grinding, Machining and Soldering

Competency field**Competency field**

Manufacturing - Common

Co-requisite units

Not applicable.

AUMFBK2001 Receive and dispatch materials, equipment and tools

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the skills and knowledge required to receive and store materials/equipment/components/parts/tools and dispatch in a timely fashion so the next process can receive them. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Receive and check materials/components/parts and equipment/tools required	1.1. Applicable <i>legislative, OHS, and organisation requirements</i> are complied with 1.2. Materials/components/parts are received in accordance with work plans 1.3. Materials/components/parts required for the job are checked to ensure they comply with job requirements 1.4. Equipment and tools required to carry out the process are accessed/obtained in accordance with work plans and <i>organisation procedures</i> 1.5. Equipment and tools are checked to ensure that they are the correct type and are in working order
2. Unpack and store materials/components/parts and equipment/ tools as required	2.1. Materials/components/parts required for the job are unpacked, checked, serviced and stored 2.2. Damaged or incorrectly received materials, components/parts are processed in accordance with organisation procedures 2.3. Equipment and tools required for the job are unpacked and stored
3. Dispatch materials/parts/components and complete work	3.1. Materials/parts/components are dispatched 3.2. Equipment and tools are stored at the completion of the process 3.3. Work area is cleaned and resupplied where required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

REQUIRED SKILLS AND KNOWLEDGE

Required skills

- speak clearly and directly in order to gain understanding of material and equipment requirements of organisation
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise supply/replenishment systems and processes for materials, equipment and tools
- material requirements for the job, which will vary according to the function, and their correct handling and storage to comply with OH&S and environmental requirements
- correct handling and storage of equipment and tools to comply with OH&S and environmental requirements
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and enterprise

EVIDENCE GUIDE	
competency in this unit	policies and procedures for receiving and dispatching materials, equipment and tools - maintaining a working knowledge of current enterprise inventory procedures - working and communicating effectively and positively with others involved in the work - applying, within authority, the requirements of the job or work role in relation to: - receiving and checking inventory items - unpacking and storing inventory items - stacking and storing inventory items in preparation for production process - dispatching inventory items - completing work area housekeeping requirements - modify activities to cater for variations in workplace context and environment.
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

RANGE STATEMENT

Job context may include:	• Work areas including: • body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture Processes including: • welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Organisation procedures may include:	• automatic or demand driven ordering and replenishment, central or local storage and maintenance procedures and systems and supply or demand driven disposal processes

Unit Sector(s)

Unit sector	Support and Logistics - Tools and Equipment

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFBM2001 Prepare and process materials and components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to undertake the preparation and processing of materials and components, including finishing for the full range of manufacturing contexts. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select materials/components required for the operation/process	1.1. Applicable <i>legislative, OHS</i> and <i>organisation</i> requirements relevant to preparing and processing materials and components are verified and complied with 1.2. The appropriate materials/components are identified according to the <i>job context</i> 1.3. The appropriate materials/components are <i>selected</i> according to the job requirements
2. Inspect and check materials/ components prior to use	2.1. Materials/components are <i>inspected</i> to ensure they conform to enterprise quality standards and specifications 2.2. Defective materials/components are identified and processed according to organisation procedures
3. Prepare and/or load/secure materials/ components as required	3.1. Specified <i>preparation</i> procedures are performed on the materials/components as required by the process/operation in accordance with enterprise procedures and OHS regulations 3.2. Materials/components are <i>loaded</i> , aligned and secured as required by the process/operation in accordance with organisation procedures and OHS regulations
4. Process materials /components as detailed in organisation procedures	4.1. Materials/components are processed using correct tools, equipment and settings 4.2. Materials/components are processed in correct sequence as detailed in organisation procedures 4.3. Materials/components are processed following organisation procedures, OHS and environmental regulations 4.4. Materials/components are processed within organisation specified time frames 4.5. Materials/components are processed and <i>finished</i> to the quality required by the standard operating procedures or other organisation specifications 4.6. Quality control tools are identified and applied

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate with others in the workplace
- apply teamwork to a range of situations
- solve problems particularly in teams in order to maintain appropriate standards
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- relevant quality measurement tools for the area of operation to ensure the quality of the product and/or process
- upstream customers and their requirements
- material requirements for the job, which will vary according to the function, and their correct handling and storage to comply with OH&S and environmental requirements
- correct handling and storage of equipment and tools to comply with OH&S and environmental requirements
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment

EVIDENCE GUIDE	
Guidelines for this Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and enterprise policies and procedures for the preparation and processing of materials and components • maintaining a working knowledge of current processing systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • selecting the materials/components required for the process • inspecting and checking materials/components prior to their use. • preparing/loading/securing materials and components as per the process requirements • processing the materials to enterprise procedures and standards • modify activities to cater for variations in workplace context and environment.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process

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	assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations

RANGE STATEMENT	
	• maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Job context may include:	• Work areas including: • body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture Processes including: • welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Selection procedures may include:	• matching part numbers to the model/code under construction • enterprise specifications for selection of materials/components may include size • shape • tolerances • critical measurements • identification of bin/batch numbers and codes • checking materials/components against requirements of production schedules/supply requisition.
Inspection of materials and components may include:	• inspection for defects that may cause the manufactured components to be faulty on completion • inspection to ensure surfaces are clean and dried to the required state as determined by the standard operating procedures • visual inspection • measuring • gauging • weighing • checking for correct part names/codes/numbers • check colour of paint meets the requirements of the job sheets • defects may be surface • structural or other.

RANGE STATEMENT	
<i>Preparation</i> may include:	• cleaning and preparation of surfaces • weighing and measuring materials to specified amounts • removal or external packaging • cleaning of surfaces • cleaning with solvents or air blowers • mixing paint • masking off of bodies • application of lubricants to parts to ensure ease of fitting during assembly operations.
<i>Loading procedures</i> may include:	• matching materials/components to equipment on the basis of part numbers and codes • alignment of components/materials with predetermined points on machinery • secure clamping of materials/components to prevent movement and distortion and minimise waste, as specified in standard operating procedures.
<i>Finishing</i> may include:	• final finish by grinding • metal finishing • panel flanging and hemming • hand filing • sanding • adjustment to tolerances • application of adhesives and sealants to ensure components are securely joined and free of leaks • nuts, bolts and screws tensioned to the specification.
<i>Procedures, regulations and policies</i> may include:	• organisation regulations • policies and procedures including organisation OH&S and environmental policy and procedures • ISO standards (Quality Management and Environmental) • Vehicle Industry OH&S Award • OH&S Legislation • Environmental Management Legislation • standard operating procedures • suppliers operating instruction manuals • organisation production process sheets • organisation production schedules • organisation supply requisition procedures/forms • organisation inventory control procedures (paper or computer based).

Unit Sector(s)

Unit sector	Support and Logistics - Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFMM3001 Reduce cycle time in work processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to reduce cycle time in manufacturing processes. It refers particularly to the non-value-added cycle time in the manufacturing process at the team level. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify opportunities for reducing cycle time	1.1. Potentially inefficient <i>production processes</i> are identified 1.2. The total <i>cycle time</i> for the identified processes is calculated 1.3. High cycle time processes and non-value added or low value added processes are identified
2. Assist in planning cycle time reduction	2.1. Opportunities for <i>reducing cycle time in work processes</i> are identified 2.2. Proposed changes are documented and endorsement for change sought
3. Support implementing cycle time reduction plan	3.1. Implementation of new processes are supported 3.2. Cycle time following implementation of the changes is recorded
4. Document and report changes to production processes	4.1. Endorsed changes are documents 4.2. Information concerning endorsed changes is distributed appropriately 4.3. Validation of the new processes is supported

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations
- solve problems particularly in teams paying attention to performance indicators to reflect changed circumstances

REQUIRED SKILLS AND KNOWLEDGE

- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- quality systems and performance measures
- established communication channels and protocols
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for reducing cycle time
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - selecting the appropriate performance measures
 - accurately documenting and reporting findings
 - achieving work quality goals
 - completing work area housekeeping requirements
- modify activities to cater for variations in organisation context and environment.

EVIDENCE GUIDE

Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Production processes</i> may include:	- supply processes - documentation and record keeping activities as well as the actual production processes such as work station setup time.
<i>Cycle time</i> may include:	- duration; how many hours/days/weeks it typically takes for a unit of work to go through the organisation, from the time it enters the organisation until the time it leaves - hands-on; the hours/days/weeks the unit is actually being worked on (by a person or machine); in other words, how long would it take to hand carry the work through the process with

RANGE STATEMENT	
	no delays hands-on time/duration; calculate the percentage of the duration that the unit of work is actually being worked on.
<i>Reducing cycle time in work processes</i> may include:	- reduction in process time - inspect time - queue time and storage time in work processes. Only process time is value added time.

Unit Sector(s)

Unit sector	Teamwork, Supervision and Management - Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFMM3002 Reduce waste in work processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to reduce waste in the manufacturing processes. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text

of competency.	is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify opportunities for reducing waste	1.1. Potentially inefficient production processes are identified 1.2. The total wastes for the identified processes are calculated 1.3. High waste processes and non-value added or low value added processes are identified
2. Assist in planning waste reduction	2.1. Opportunities for reducing wastes in work processes are identified 2.2. Proposed changes are documented and endorsement for change sought
3. Support implementing waste reduction plan	3.1. Implementation of new processes are supported 3.2. Wastes following implementation of the changes are recorded
4. Document and report changes to processes	4.1. Endorsed changes are documents 4.2. Information concerning endorsed changes is distributed appropriately 4.3. Validation of the new processes is supported

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations
- solve problems particularly in teams paying attention to performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions

REQUIRED SKILLS AND KNOWLEDGE

- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- quality systems and performance measures
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for reducing waste
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - selecting the appropriate performance measures
 - accurately documenting and reporting findings
 - achieving work quality goals
 - completing work area housekeeping requirements
- modify activities to cater for variations in organisation context and environment.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using

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	tools/equipment/machinery required for the production process without undue disruption to the production process assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Production processes may include:

- supply processes
- documentation and record keeping activities as well as the actual production processes such as work station setup time.

Waste may include:

- reduction in non-value adding activities and resources incurred in meeting the requirements of the customer. Waste includes all the costs associated with failures, appraisals, and surpluses. Pure waste consists of those activities and related expenses that are totally unnecessary, such as scrap and re-work. Hidden waste comprises those costs associated with the activities that do not add value, such as inspection and storage. These wasteful activities are sometimes necessary because of existing operating conditions and strategies. Waste can be found in

RANGE STATEMENT

	failures, appraisals, task and surpluses. Identifying and eliminating waste are seen as the backbone of continuous improvement systems.
<i>Measuring and recording waste</i> may include:	tallying the number of production item rejects; reduce this figure and waste is reduced (costs saved, production time for passed finished product reduced, production targets met more quickly, etc).

Unit Sector(s)

Unit sector	Teamwork, Supervision and Management - Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFMM3003 Plan and organise production

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to plan and organise the facilities, resources and processes required for the production and assembly of bus/truck/trailers. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify production objectives	1.1. Production objectives are clearly and unambiguously identified and clarified in accordance with <i>organisation requirements</i>
2. Determine production team and resource requirements	2.1. Production team requirements are determined based on task requirements and necessary competencies 2.2. Suitable staff and/or contractors are selected based on competence and availability 2.3. Required raw materials, tools, equipment, assembly or fabrication jigs and other physical resources needed for the production are identified using relevant <i>sources of information</i> and a specification drawn up detailing the required quality and quantities
3. Develop production budget, quotas, time schedule and milestones	3.1. Identified production tasks and activities are costed in terms of staffing and resource requirements and incorporated into a production budget 3.2. A time schedule for the production is drawn up clearly showing the sequence and inter-relationships of activities as well as milestones and estimated start and completion dates 3.3. The production plan showing the resourcing arrangements, time schedule and proposed budget is submitted to the appropriate personnel and any necessary changes made
4. Assign production tasks to team	4.1. Production tasks and component activities are clearly identified and specified and assigned to team members based on their competence, experience and availability 4.2. The production team is briefed on their respective roles and responsibilities
5. Implement production plan	5.1. Requirements for major activities, staffing, resources, critical dates and the required final and intermediate outcomes of the production are confirmed prior to commencement of the production in accordance with the

ELEMENT	PERFORMANCE CRITERIA
	approved production plan and company requirements 5.2. Potential problems and complications are identified in the course of the production and suitable contingency action initiated in accordance with company procedures 5.3. Stakeholders (i.e. user departments, management, etc.) are kept informed of production objectives and progress throughout the production
6. Review production progress and outcomes	6.1. Production progress is closely monitored against the required quality of the products and sub-assemblies as well as adherence to both budget and time schedule, and reported to appropriate personnel 6.2. Adequate records are maintained of all key information pertaining to the production process in accordance with company requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to effectively organise production and assembly processes
- apply teamwork to a range of situations, specifically in the organising of resources for the production process
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure OHS requirements are adhered to in the production and assembly process
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisation technical work documentation covering procedures, specifications and schedules
- processes to identifying production objectives

REQUIRED SKILLS AND KNOWLEDGE

- processes for determining production staffing and resource requirements
- development principles for production budget, quotas, time schedule and milestones
- company procedures for assigning tasks to staff
- procedures for implementing project plan
- procedures for reviewing production progress and outcomes.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- identify production objectives
- determine production staffing and resource requirements
- develop production budget, quotas, time schedule and milestones - written / electronic
- assign tasks to staff
- implement production plan and review production progress and outcomes.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for

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	this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
<i>Resources</i> may include:	• types of plant, tooling and equipment • documentation and reporting systems

RANGE STATEMENT

	• production schedules • production manuals • access to professional staff • qualified workplace assessors.
<i>Sources of information</i> may include:	• customer requirements • industry/workplace codes of practice • manufacturer specifications • organisational operating procedures • OHS legislation.

Unit Sector(s)

Unit sector	Teamwork, Supervision and Management - Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFQM2001 Monitor and maintain continuous improvement of systems and processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to use continuous improvement systems and processes and quality management tools to ensure continuous improvement of product and processes. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify opportunities for continuous improvement within the scope of work	1.1. Applicable <i>legislative, OH&S and organisation requirements and procedures</i> relevant to the organisation are interpreted and applied 1.2. The organisation <i>continuous improvement systems</i> and processes are monitored by team/work group to ensure that opportunities are continually being sought 1.3. Customer requirements are monitored to ensure the product/process continues to exceed their expectations
2. Use continuous improvement tools and problem-solving techniques	2.1. <i>Continuous improvement tools and problem-solving techniques</i> relevant to the process are identified 2.2. Continuous improvement tools and problem-solving techniques relevant to the process are applied 2.3. Recommendations and solutions to problems are made through standard organisation processes
3. Apply continuous improvement to eliminate waste	3.1. Organisation <i>waste</i> minimisation principles and processes are identified 3.2. Organisation waste minimisation processes are continuously applied
4. Apply recognised improvement opportunities into the work area	4.1. Improvements to processes are trialled 4.2. Improvements to processes are monitored and evaluated 4.3. Improvements to processes are proposed for inclusion in work procedures and related information

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

REQUIRED SKILLS AND KNOWLEDGE

Required skills

- identify opportunities for change and innovation at an operational or functional level
- provide support to operational staff in the implementation of change processes
- work with competitive knowledge of the business, industry and sector
- speak clearly and directly in order to develop continuous improvement practices
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators of the organisation or department
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions to understand the requirements to reduce waste processes
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- organisation continuous improvement systems and processes
- quality measurement tools for use in continuous improvement processes
- problem identification and resolution techniques
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and enterprise

EVIDENCE GUIDE

competency in this unit

policies and procedures for monitoring and maintaining continuous improvement of systems and processes

- maintaining a working knowledge of current enterprise continuous improvement systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - participating in the identification of opportunities for continuous improvement initiatives
 - using continuous improvement tools and problem solving techniques
 - applying measures for the elimination of waste
 - participating in the identification and application of continuous improvement processes
- modify activities to cater for variations in workplace context and environment.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment must take place in accordance with the endorsed *Assessment Guidelines for the Automotive Industry*
- assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements and procedures may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

OH&S requirements and procedures may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements and procedures may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards

RANGE STATEMENT	
	recording and reporting guidelines.
Manufacturing context may include:	- work areas may include body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture - process may include welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Continuous improvement systems may include:	- AS/NZ ISO 2000/ 2001/2004 - Kaizen - enterprise-specific improvement systems.
Problem solving techniques may include:	- facts in analysis of data - step-by-step process - use of measurement - action plan - review.
Continuous improvement tools may include:	- statistics - cause and effect diagrams - fishbone diagram - Pareto diagrams - run charts - X bar R charts - PDCA - balanced scorecards - benchmarking - performance measurement - upstream and downstream customers - internal and external customers immediate and/or final.
Waste may include:	- over-processing - over-production - excess inventory/stock - corrections/rework - rejects - non-value-adding activities and resources - efforts and costs associated with failures - appraisals and surpluses - reducing cycle time.

Unit Sector(s)

Unit sector	Quality - Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFQM3002 Sustain quality standards

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to identify, develop and sustain quality standards in the organisation. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify corrective actions to be implemented	1.1. Relevant quality goals as directed by the organisation through <i>instructions</i> are identified and clarified 1.2. Required quality improvements are identified 1.3. Plan for the review of quality improvements is developed 1.4. Current quality performance standards are identified
2. Monitor quality standards	2.1. Quality performance standards are monitored and sustained in accordance with the review plan 2.2. Deviations in standards are identified
3. Propose remedial activity	3.1. Potential changes to maintain identified improvements or provide further improvement are identified 3.2. Implementation plan for potential changes are proposed 3.3. Procedures reflecting proposed improvements are ensured 3.4. Deviations and proposed remedial action are reported
4. Implement adjustments	4.1. Endorsed changes are documented 4.2. Review process is validated and documented

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations
- solve problems particularly in teams paying attention to performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and

REQUIRED SKILLS AND KNOWLEDGE

instructions

- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- quality systems and performance measures
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for sustaining quality systems
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - selecting the appropriate performance measures
 - accurately documenting and reporting findings
 - achieving work quality goals
 - completing work area housekeeping requirements
- modify activities to cater for variations in organisation context and environment.

Context of and specific

- assessment of the competency should take place in a safe

EVIDENCE GUIDE	
resources for assessment	working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
Instructions may include:	- organisation procedures relating to the use and operation of tools and equipment - production planning figures - organisation instructions, including job sheets, plans, specifications, drawings and designs - organisation procedures relating to reporting and communications - manufacturers' instructions for the use of equipment and materials.

Unit Sector(s)

Unit sector	Quality - Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFQM3003 Apply visual factory principles and practices to an automotive manufacturing environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the skills and knowledge required to employ visual factory principles and practices to an automotive manufacturing environment. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan application of visual factory principles and practices	1.1. Applicable <i>legislative, OHS, and organisational</i> requirements relevant to the use of <i>applying visual factory principles and practices</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i>, plans and/or workplace check sheets are read and interpreted to identify processes and materials to complete work tasks 1.3. Principal safety concerns in the work area are identified 1.4. Principal business processes in the work area, including <i>Kaizen, KanBan</i> and <i>Lean Manufacturing</i> systems are identified
2. Apply Five S principles in identifying opportunities for labelling and signage	2.1. <i>Five S</i> activities in the work place are identified 2.2. Understandings and responsibilities associated with Five S in the work group are confirmed 2.3. Five S audits in the work place are applied
3. Monitor labelling and signage associated with Visual Factory	3.1. Existing labelling and signage methods are monitored and inadequacies reported 3.2. New labelling and signage proposed as required 3.3. Suitability of labelling and signage confirmed

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly

REQUIRED SKILLS AND KNOWLEDGE

- apply teamwork to a range of situations
- solve problems particularly in teams paying attention to performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- quality systems and performance measures
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for applying Visual Factory principles and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - use of signage and labelling in the workplace
 - feedback is provided to the work group on the effectiveness

EVIDENCE GUIDE	
	of the activity • achieving work quality goals • completing work area housekeeping requirements • modify activities to cater for variations in organisation context and environment.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment must take place in accordance with the endorsed <i>Assessment Guidelines for the Automotive Industry</i> • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, organisation and job role is recommended, for example:

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility

RANGE STATEMENT

of the item, and local industry and regional contexts.

Legislative requirements may include:

- applicable legislation from all levels of government that affect organisational operations. Requirements may include award and enterprise agreements, industrial relations, employee relations, Australian Standards, confidentiality and privacy, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice and duty of care.

OHS requirements may include:

- Commonwealth, State or Territory legislation and regulations, and organisational safety policies and procedures. Requirements may include the use of personal protective equipment and clothing, rescue services, fire fighting organization and equipment, first aid equipment, hazard and risk control and elimination, systems covering of hazardous materials and substances and manual handling including lifting and carrying.

Organisational requirements may include:

- legal
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- quality assurance
- procedural manuals
- quality and continuous improvement processes and standards
- OHS
- emergency and evacuation
- ethical standards
- recording and reporting
- access and equity principles and practices
- equipment use
- maintenance and storage
- environmental management (waste disposal, recycling and re-use guidelines).

Applying visual factory principles and practices may include:

- improving productivity, safety, quality, on-time delivery, profits and employee moral by implementing "visual controls".
- making working areas more user friendly by answering questions, identifying equipment, materials and locations, describing actions and procedures, and providing safety warnings and precaution information.
- helping employees avoid wasting time by giving them the information they need, where and when they need it
- posting information about the job to be done, the work area (environment), the equipment and materials to be used, safety and job performance
- safety signs, signage on electrical equipment, on valves and

RANGE STATEMENT	
	equipment, piping, process control, tank and vessels, and comprehensive sign systems listing/simplifying more complex processes.
Instructions may include:	• workplace procedures relating to the use and operation of tools and equipment • production planning figures • workplace instructions, including job sheets, plans, specifications, drawings and designs • workplace procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials.
Kaizen may include:	• a system of continuous improvement, usually incrementally and it assumes that every system/procedure/tool can be improved upon.
KanBan may include:	• a signalling inventory management system involving 'pull' demand for stock with the supply system responding to a demand for stores., also known as a Just-In-Time (JIT) system.
Lean manufacturing may include:	• a management philosophy focusing on the reduction of the seven wastes of: • over-production • waiting time • transportation • processing inventory • motion • scrap in manufactured products.
Five S may include:	• a program focussing on having visual order, organisation, cleanliness and standardisation. The results that are expected are improved profitability, efficiency, service and safety. The factors of the Five S are: • sort: is the sorting or 'clean up' of the work area, keeping only what is necessary in terms of materials, tools, equipment and supplies and those that are not frequently used being moved to a separate, common storage area and items not used being discarded. Sorting is the first step in keeping the work area tidy • systematise: is to 'organise'. Arrange and identify everything in a work area for the most efficient and effective retrieval and return to its proper place. Commonly used tools should be readily available. Storage areas, cabinets and shelves should be properly labelled. Clean and paint floors to make

RANGE STATEMENT

	it easier to spot dirt, waste materials and dropped parts and tools. Outlined areas on the floor to identify work areas, movement lanes, storage areas, finished product areas, etc. Shadows of tool boards, making it easier to quickly see where each tool belongs. • sweep: is regular cleaning and is associated with inspecting while cleaning the machines, tools, equipment and supplies you work with. • standardisation: is the 'simplification' of work practices. This involves the use of labels and signs, posters and banners to make people aware of, and remind them about the standards. • self-discipline: is to encourage and reinforce self discipline through having a formal system of monitoring the results of the Five S program.

Unit Sector(s)

Unit sector	Quality - Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTA3001 Document designs

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to document the design details and associated aspects required for the development and production of bus/truck/trailers. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and achieve work production goals	1.1. The design requirements of a product or sub-assembly are identified in consultation with design, engineering, marketing and other <i>appropriate personnel</i> 1.2. All design drawings and information on technical specifications for the product or sub-assembly are identified and obtained 1.3. The steps involved in the manufacture of the product or sub-assembly are identified 1.4. An inventory of required equipment, parts and components is established in accordance with <i>organisation requirements</i>, including an assessment of their current availability or the need to either manufacture them or purchase/lease them 1.5. Any fabrication/machining processes and instructions are determined and clarified with participating departments/sections/areas 1.6. The timetable, budget, resource requirements, staffing and purchase/supply schedule for the manufacture of the product or sub-assembly are drawn up and confirmed with designated staff 1.7. The approved plan is communicated to all relevant staff in management, production, engineering and other sections of the organisation concerned
2. Specify critical product quality parameters	2.1. Critical product or sub-assembly quality and technical parameters are identified and documented in accordance with the <i>work quality goals</i> of the organisation 2.2. Draft documentation on product or sub-assembly quality and technical parameters are approved by relevant staff
3. Specify materials requirements	3.1. Required materials and components for the manufacture and assembly of the product or sub-assembly are identified and documented 3.2. Draft documentation on the required materials and components for the manufacture and assembly of the product or sub-assembly is approved by relevant staff

ELEMENT	PERFORMANCE CRITERIA
4. Specify production processes	4.1. Processes, plant and equipment required for the manufacture and assembly of the product or sub-assembly are identified and documented 4.2. Draft documentation on the processes, plant and equipment required for the manufacture and assembly of the product or sub-assembly is approved by relevant staff
5. Specify testing requirements	5.1. Required testing and quality assurance procedures for the manufacture and assembly of the product or sub-assembly are identified and documented 5.2. Draft documentation on the required testing and quality assurance procedures for the manufacture and assembly of the product or sub-assembly is approved by relevant staff
6. Specify cost estimates	6.1. All direct and indirect costs involved in the manufacture and assembly of the product or sub-assembly are estimated with consultation from relevant finance, design, engineering, purchasing and other relevant staff
7. Disseminate documentation	7.1. All documentation related to the specification, costing, manufacture and assembly of the product or sub-assembly is processed for approval 7.2. The documentation on product or sub-assembly design specifications, costs and manufacture and assembly processes is stored and distributed

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate design plans
- apply teamwork to a range of situations, including design consultation processes
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure design documentation meets organisation templates and standards
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications and schedules
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- process to identify design requirements
- processes to identify critical product quality, materials, tests and costing
- processes for disseminating and storing documentation
- drawing principles and processes.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
- responding positively to changing work requirements
- contributing effectively to cost reduction initiatives

EVIDENCE GUIDE	
	- effectively applying problem solving techniques - modify activities to cater for variations in organisation context and environment - identify design requirements - design requirements incorporated involving quality, materials, production processes, testing and costing - documentation stored - paper based / electronic.
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>Appropriate personnel</i> may	clients and managers

RANGE STATEMENT	
include:	• supervisors • suppliers • team leaders • team members.
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Work quality goals may include:	those established within a quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.

Unit Sector(s)

Unit sector	Technical

Competency Field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTA3002 Conduct die coating

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to conduct die coating. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text

of competency.	is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to OHS and organisation requirements 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with appropriate personnel and applied 1.3. Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use
2. Disassemble and inspect die	2.1. Die is safely located to the coating area 2.2. Die coating insulation material is inspected for wear and removed as appropriate 2.3. Die is inspected and analysed for defects 2.4. Defects found are assessed for remedial solution 2.5. Minor rectification is applied, dependent on the defect and in accordance with engineering specifications 2.6. Die is tested to ensure rework has eliminated the fault and any final adjustments made 2.7. Documentation is completed outlining nature of the problem, work conducted and outcome, in accordance with organisation requirements
3. Coat and assemble die	3.1. Die coating insulation material is selected and prepared for the die 3.2. Die is cleaned in preparation for coating 3.3. Heating processes are completed in accordance with organisation requirements and available heating equipment 3.4. Die coating insulation material is applied to the die 3.5. Die is assembled and checked in preparation for pressing 3.6. Die is returned to production sequence
4. Clean up	4.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and

ELEMENT	PERFORMANCE CRITERIA
	<i>cost reduction initiatives</i> 4.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed coating tasks
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure heating processes are conducted in accordance with organisation and OHS requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant organisation production quality standards
- manufacturing and production techniques for vehicle metal components
- thermodynamic principles
- Automotive Industry terminology
- tools and equipment types, characteristics, uses and limitations
- die coating techniques and equipment
- die faults and symptoms
- molten metal properties
- processes for the calculation of material requirements
- material Safety Data Sheets
- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian Standards.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- location, interpretation and application of relevant information, standards and specifications
- compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations
- compliance with organisation policies and procedures including quality requirements
- safe and effective operational use of tools and equipment
- communication and working effectively and safely with others
- completion of the cleaning, coating, assembly, disassembly and inspection on a minimum of 10 dies, including rectification of minor defects on at least 5.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Cost reduction initiatives may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTA3003 Conduct tool setting

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to conduct tool setting in production machines. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text

of competency.	is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to OHS and organisation requirements 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with appropriate personnel and applied 1.3. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use
2. Select and check	2.1. Machining tool is correctly selected in accordance with the maintenance schedule and machine specifications 2.2. Machining tool is inspected and tested for compliance with specification 2.3. Out of specification tools are processed for repair or disposal in accordance with organisation procedures 2.4. Machining tool is cleaned, prepared for use and protected during transit
3. Remove and replace	3.1. Required location for the machining tools are checked and confirmed against machine specification 3.2. Machine is made safe prior to commencing work in accordance with OHS requirements 3.3. Housings/guards are removed in accordance with machine specifications 3.4. Machining tools are located and removed 3.5. Replacement machining tools are installed and set to machine specification 3.6. Housings/guards are replaced and restored in accordance with machine specifications 3.7. Test runs are conducted and sample products are checked to certify the new machining tool 3.8. Documentation is completed outlining the detail of the replacement in accordance with organisation requirements

ELEMENT	PERFORMANCE CRITERIA
4. Maintain machining tool stocks	4.1. Machining tools are processed for maintenance in accordance with organisation procedures 4.2. Stock levels of machining tools are reviewed and action taken to avoid stock out situations 4.3. Stock levels of peripherals and consumables are maintained to support continuity of operations 4.4. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and cost reduction initiatives 4.5. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform appropriate personnel of completed tool setting tasks
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure correct compliance testing procedures are adhered to
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant organisation production quality standards
- organisation manufacturing and production line techniques and processes
- automotive industry terminology
- production line machines and equipment types, characteristics, uses and limitations
- tool setting techniques and equipment processes
- organisation tool maintenance processes
- processes for the calculation of material requirements
- material Safety Data Sheets

REQUIRED SKILLS AND KNOWLEDGE

- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- relevant Australian Standards.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- location, interpretation and application of relevant information, standards and specifications
- compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations
- compliance with organisation policies and procedures including quality requirements
- safe and effective operational use of tools and equipment
- communication and working effectively and safely with others
- completion of the tool setting and maintenance operations for a production line over five (5) full shifts.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its

EVIDENCE GUIDE

	correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may

- clients and managers

RANGE STATEMENT

include:	• supervisors • suppliers • team leaders • team members.
<i>Cost reduction initiatives</i> may include:	• continuous improvement programs • cost benchmarks • power conservation • productivity achievement • waste avoidance.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTA3004 Monitor and maintain metals treatment plant operations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to monitor and maintain a multi-stage metals treatment plant designed to clean and prepare metal bodies for painting. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including relevant inspection reports and forms and quality requirements are obtained, confirmed with <i>appropriate personnel</i> and applied 1.3. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use
2. Adjust and maintain treatment solutions	2.1. Treatment solution specification and tolerances are identified and confirmed from the approved operating procedure or equivalent 2.2. Location of each sample source is identified from plant schematics and the sampling and testing schedule is identified and correctly interpreted 2.3. Sampling and labelling is carried out in accordance with approved procedure 2.4. Samples are tested in accordance with the approved procedure and the results recorded to organisation standards
3. Adjust and maintain stage operations	3.1. Operating processes, control mechanisms, flow and specifications of each treatment stage are identified and confirmed from organisation plant specifications and procedures 3.2. Stage plant components are inspected and prepared for operation, including pre operational servicing, in accordance with the organisation procedures 3.3. Stage operations are test run and adjustments are made to controls, components and solutions to bring the stage to the correct operating specification

ELEMENT	PERFORMANCE CRITERIA
	3.4. Operations are monitored for compliance with specification in accordance with approved procedures 3.5. Faults in stage operations are diagnosed and rectified or reported for specialist support action 3.6. Excess, contaminated or unwanted materials, including chemicals and solutions are disposed of in accordance with organisation requirements 3.7. Documentation covering the operation of each stage, including fault resolution, is completed in accordance with organisation requirements
4. Maintain product quality	4.1. Product quality checks are carried out in accordance with organisation work quality goals 4.2. Defects are analysed and the likely cause is identified and investigated 4.3. Actions to restore the product quality are implemented, checked and confirmed in accordance with organisation procedures 4.4. Defects which cannot be remedied are reported for specialist attention 4.5. Documentation covering each defect and response is completed in accordance with organisation requirements
5. Clean up	5.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements 5.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to report faults to specialist support personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure quality goals are maintained

REQUIRED SKILLS AND KNOWLEDGE

- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- organisation safety policies and procedures
- automotive industry manufacturing terminology
- organisation production techniques and quality requirements for vehicle painting
- metals treatment plant functions, flow systems, control and documentation systems
- common metals treatment plant product faults/defects
- treatment plant related tools and equipment types, characteristics, uses and limitations
- flow control systems, mechanisms and adjustment processes
- basic chemical uses and reactions in relation to the treatment of metals for painting
- testing processes and specifications related to titration, pressure and coating integrity
- processes for the calculation of material requirements
- material Safety Data Sheets
- plans, drawings and specifications
- hazardous materials (Dangerous Goods) regulatory requirements
- materials handling, storage and environmentally compliant waste management processes
- relevant Australian Standards.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- location, interpretation and application of relevant information, standards and specifications
- compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations
- compliance with organisation policies and procedures including quality requirements
- safe and effective operational use of tools and equipment

EVIDENCE GUIDE

	• communication and working effectively and safely with others • individually monitor and maintain a multi-stage metals treatment plant over 5 full shifts during which: • pre-start checks on all stages are to be completed to organisation requirements • solutions are to be maintained to specifications using approved sampling testing and remedial processes • plant operations are to be maintained to specification • product quality is to be maintained to specification • rectification of at least three different treatment related metal product faults including all organisation documentation and reporting requirements (Some simulation may be required to ensure adequate scope).
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work

RANGE STATEMENT

environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

those established within a quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.

Work quality goals may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTA4005 Analyse a test vehicle for research purposes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to analyse a test vehicle or prototype vehicle for the purpose of testing or trialling the vehicle and/or vehicle component. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to analyse vehicle	1.1. Applicable <i>legislative, OHS, and organisational</i> requirements relevant to the <i>analysis of a vehicle for research purposes</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i>, plans and/or workplace check sheets are read and interpreted to identify processes and materials to complete work tasks 1.3. <i>Research objectives</i> are identified for test/trial 1.4. <i>Preparation of vehicle</i> is verified in accordance to test/trial plan 1.5. Required <i>analysis parameters</i> are identified 1.6. Hazards and risks are identified and assessed 1.7. <i>Personal preparation</i> is undertaken for test/trial
2. Operate vehicle and monitor environment	2.1. Performance profile is maintained as required for test/trial 2.2. Observations are noted using organisational procedures 2.3. Observations are categorised in accordance with organisational parameters and research objectives
3. Report observations	3.1. Running observations are reviewed and draft report prepared 3.2. Full report is submitted in accordance with organisational procedures 3.3. Vehicle records are maintained/updated and information is processed in accordance with workplace procedures 3.4. Debrief is undertaken by project/test/trial manager/engineer in accordance with organisational procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations
- solve problems particularly in teams paying attention to performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of tools and equipment and procedures for their safe use, operation and maintenance
- established communication channels and protocols
- vehicle performance characteristics
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information
- industry or organisation licensing arrangements.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation

EVIDENCE GUIDE	
competency in this unit	policies and procedures for operating a test vehicle for research purposes • maintaining a working knowledge of current organisation inventory procedures • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • preparing for tests or trials • performing tests or trials • preparing reports of results • achieving work quality goals • completing work area housekeeping requirements including the documentation of project activity and process outcomes • modify activities to cater for variations in organisation context and environment.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisational requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

RANGE STATEMENT	
<i>Analysis of a vehicle for research purposes</i> may include:	- draws on the operator's specific automotive mechanical knowledge, but not on the driving expertise - specific outcomes from the operator of a vehicle being analysed within a performance envelope for research purposes - difference to those that on board data acquisition equipment is designed to accumulate
<i>Instructions</i> may include:	- organisation procedures relating to the use and operation of tools and equipment - departmental requirements - organisation instructions, including job sheets, plans, specifications, drawings and designs - organisation procedures relating to reporting and communications - manufacturers' instructions for the use of equipment and materials.
<i>Research objectives</i> may include:	performance outcome(s) of the test vehicle in relation to the component or system being tested/trialled.
<i>Preparation of vehicle</i> may include:	installing into the vehicle the necessary test equipment and monitors for the system or component being tested or trialled.
<i>Analysis parameters</i> may include:	the profile in terms of operational performance that the test/trial designers require for the test/trial to be a success.
<i>Personal preparation</i> may include:	the knowledge or skill implicit in the execution of a procedure required to produce the required test/trial environment. This may be the operation of a test instrument during the test/trial, confirming or renewing knowledge of a sound, operating criteria or road circuit.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTA5006 Produce research reports

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to carry out research activities, analyse research data and produce research reports, in conjunction with professional and other personnel, related to the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine research requirements	1.1. Applicable <i>legislative, OHS, and organisation requirements</i> relevant to the <i>produce research reports</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Research brief or problem is defined in conjunction with the relevant design, engineering, marketing, production or other personnel 1.4. Research requirements are documented and validated with relevant personnel
2. Select a research strategy	2.1. Suitable research strategies for use in the research project are identified and evaluated, including literature searches, questionnaire surveys, interview surveys, workshops, testing and analysis and computerised searches of information databases 2.2. Research plan is processed for approval
3. Conduct research	3.1. Research activities are conducted 3.2. Collected information is processed and/or summarised in accordance with research strategy
4. Evaluate research outcomes	4.1. Research data is analysed either manually or with a computer as required 4.2. Research outcomes are structured to answer the questions posed in the research brief or problem 4.3. Any specific issues and important additional findings are highlighted and summarised 4.4. Research outcomes are discussed with relevant personnel and appropriate adjustments made to findings based on the feedback obtained
5. Document research outcomes	5.1. Research outcomes are summarised in appropriate format 5.2. Research documentation is stored in hard copy and/or

ELEMENT	PERFORMANCE CRITERIA
	electronic format 5.3. Research documentation is distributed to specified personnel

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to define the research brief or problem with appropriate personnel
- apply teamwork to a range of situations, including the conducting of research
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure correct documentation procedures are adhered to
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- product development/engineering area involving the mechanical, electrical and fabrication functions
- operation of systems and components
- operation of computers
- operation and selection of computer hardware and software applications/systems
- types of tools and equipment and procedures for their safe use, operation and maintenance
- established communication channels and protocols
- methods of interpreting and applying quality standards
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role which could include:
- successfully completing research reports
- completing work area housekeeping requirements including the documentation of project activity and process outcomes.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

RANGE STATEMENT	
<i>Produce research reports</i> may include:	• carrying out research activities, analysing research data and producing research reports in conjunction with professional personnel related to the design, development and production of motor vehicles. Reports are to meet accepted organisational requirements.
<i>Instructions</i> may include:	• workplace procedures relating to the use and operation of tools and equipment • departmental requirements • workplace instructions, including job sheets, plans, specifications, drawings and designs • workplace procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTA5007 Seek, evaluate, organise and prepare information

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to gather, assess, record and store relevant information to assist in decision making in the course of the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Obtain and evaluate information	1.1. Applicable <i>legislative, OHS, and organisation requirements</i> relevant to the <i>seeking, evaluating, organising and preparing information</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. A variety of sources of information are regularly reviewed for usefulness, reliability and cost 1.4. Relevant and sufficient information is sought and updated on all relevant factors and problems which affect the area of responsibility 1.5. Information is assessed for its validity and reliability 1.6. Where information is unclear, or difficult to understand, clarification and assistance is sought 1.7. Where available information is inadequate, additional information is obtained 1.8. Information is organised into a suitable form to aid decision-making 1.9. Opportunities are taken to establish and maintain contacts with those who may provide useful information 1.10. Conclusions drawn from relevant information are based on reasoned argument and appropriate evidence
2. Record and store information	2.1. Information recorded is accurate, complete and legible 2.2. Information is recorded and stored using accepted formats, systems and organisation procedures ensuring that information can be retrieved promptly when required 2.3. New methods of recording and storing information are researched and suggested

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly to establish contacts with people who may provide useful information
- apply teamwork to a range of situations, including the organising of information
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure information is recorded and stored using accepted formats, systems and organisation procedures
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- how to determine model requirements and produce a model
- operation of systems and components
- operation and selection of computer hardware and software applications/systems
- types of tools and equipment and procedures for their safe use, operation and maintenance
- established communication channels and protocols
- interpreting and applying quality standards
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards,

EVIDENCE GUIDE	
required to demonstrate competency in this unit	codes of practice and established safe practices and organisation policies and procedures • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • seeking, evaluating, recording and storing relevant information to assist decision making • achieving work quality goals • completing work area housekeeping requirements including the documentation of project activity and process outcomes.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present

RANGE STATEMENT

with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Seeking, evaluating, organising, and preparing information may include:

The gathering, assessing, recording and storing of relevant information to assist decision making in the design, development and production of motor vehicles.

RANGE STATEMENT**Instructions** may include:

- workplace procedures relating to the use and operation of tools and equipment
- departmental requirements
- workplace instructions, including job sheets, plans, specifications, drawings and designs
- workplace procedures relating to reporting and communications
- manufacturers' instructions for the use of equipment and materials.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTE3001 Conduct engine hot test

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to assess the status of an engine for operating inconsistencies or faults. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied 1.3. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability and any faults are rectified or reported prior to commencement 1.4. Materials appropriate to the work application are identified, obtained, prepared and located ready for use
2. Shift engine	2.1. Engine is transferred from the assembly line to the engine testing area 2.2. Engine is located in position for hot test procedures
3. Engine is hot tested	3.1. Engine is mounted in the engine testing cradle 3.2. Services are connected to the engine simulating normal operating conditions 3.3. Engine is brought to hot operating conditions 3.4. Computerised/keypad aided and manual/sensory tests are conducted on all operating facets of the engine against designated performance specifications 3.5. Minor modifications are carried out in accordance with organisation procedures 3.6. Results of all tests are recorded and documented 3.7. Engine is designated as conforming or requiring rectification, labelled and prepared for transfer to assembly line or engine rectification area respectively
4. Clean up	4.1. Work area is cleared and materials disposed of, reused or recycled in accordance with organisation requirements and <i>cost reduction initiatives</i> 4.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to confirm status of engine after testing with appropriate personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure modifications are carried out to required safety, legislative and organisation standards
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- workplace and equipment safety requirements
- relevant organisation production quality standards
- manufacturing and production techniques for engines
- automotive industry terminology
- tools and equipment types, characteristics, uses and limitations
- engine faults and symptoms
- engine parts and construction
- engine testing techniques and equipment
- processes for the calculation of material requirements
- material Safety Data Sheets
- plans, drawings and specifications
- materials handling, storage and environmentally friendly waste management
- organisation safety policies and procedures
- relevant Australian standards.

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- location, interpretation and application of relevant information, standards and specifications
- compliance with organisation safety policies and procedures and OHS legislation/regulations/codes of practice applicable to operations
- compliance with organisation policies and procedures including quality requirements
- safe and effective operational use of tools and equipment
- communication and working effectively and safely with others
- application of hot test procedures to correctly identify a minimum of 5 different and significant nonconforming engines, which must include faults identified using both computer/keypad aided systems and manual/sensory capabilities.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Cost reduction initiatives may include:

- continuous improvement programs
- cost benchmarks
- power conservation
- productivity achievement
- waste avoidance.

Unit Sector(s)

Unit sector	Technical - Engines

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTK5001 Establish a test or trial for components of plant, tooling, equipment or systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to design and establish a test/trial of a component of plant, tooling, equipment, product or system in accordance with an industry standard test. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify test/trial objectives	1.1. Applicable organisation requirements relevant in establishing the testing/trialling of components of plant, tooling, equipment, product or systems are verified and complied with throughout the work activity 1.2. Instructions and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Materials/components/parts required to be tested are received in accordance with organisational inventory procedures 1.4. The test/trial objectives are identified in consultation with development engineers or other relevant stakeholders
2. Determine the test/trial methodology	2.1. The testing/trialling sequence and specified procedures for the tests/trials are determined in accordance with the test objectives, national or international standards, organisational procedures and manufacturers' instructions 2.2. The required test/trial equipment and tools are identified and accessed/obtained in accordance with work plans and organisational procedures 2.3. Stakeholders are identified and consulted
3. Identify and allocate resources	3.1. Resources required to test/trial the component are identified 3.2. Personnel are tasked to undertake the setup and conduct of the test/trial 3.3. A test/trial plan is prepared in accordance with organisational requirements and in agreeance with the relevant stakeholders
4. Determine and establish the reporting regime	4.1. The data elements required to be reported on and the frequency of reports are determined in consultation with the tasking development engineers 4.2. The report(s) structure(s) is/are identified in conjunction with the tasking development engineers

ELEMENT	PERFORMANCE CRITERIA
	4.3. Reporting regime is incorporated into the test/trial plan 4.4. Reporting regime is trialled to ensure practicality and credibility of report format, data and frequency.
5. Monitor the test/trial	5.1. Conduct is monitored in accordance with the test/trial plan 5.2. Guidance is provided to personnel conducting the trial as required 5.3. Modifications to the plan are proposed to the stakeholders where required and endorsed changes implemented
6. Complete the work processes	6.1. Reports are distributed as required in the plan and organisational procedures 6.2. Test/trial procedures are documented and recorded in accordance with organisational recordkeeping procedures 6.3. Resources are recycled or written off in accordance with organisational procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to consult with development engineers and other relevant stakeholders
- apply teamwork to a range of situations, including the setup and conduct of testing/trialling
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure that environmental and organisational procedures are adhered to regarding the recycling and writing off of resources
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools

REQUIRED SKILLS AND KNOWLEDGE

- types of tools and equipment and procedures for their safe use, operation and maintenance
- vehicle structures
- evaluation techniques
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- methods of problem identification and resolution
- the preparation of plans and tasking of resources
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for establishing a test for components/materials of plant, equipment, product, or systems
- maintaining a working knowledge of current organisation inventory procedures
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role which could include:
 - establishing tests or trials
 - monitoring tests or trials
 - oversighting of reports of results
 - achieving work quality goals
 - accurate completion of test/trial procedures
- completing work area housekeeping requirements including the documentation of project activity and process outcomes
- modify activities to cater for variations in organisation context and environment.

Context of and specific

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle

EVIDENCE GUIDE

resources for assessment	manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines

RANGE STATEMENT	
	• policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Components of plant, tooling, equipment, product or systems may include:	components of plant, tooling, equipment, product and or systems used in the manufacturing or testing process. Within this context product is further defined as a component, sub-component or material of a passenger motor vehicle. Plant, tooling, equipment and systems are further defined as components or sub-components of the plant, tooling, materials or systems of the testing or manufacturing infrastructure/resources.
Instructions may include:	• workplace procedures relating to the use and operation of tools and equipment • departmental requirements • workplace instructions, including job sheets, plans, specifications, drawings and designs • workplace procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials.
Inventory procedures may include:	automatic or demand driven ordering and replenishment, central or local storage and maintenance procedures and systems and supply or demand driven disposal processes.
Procedures for the tests/trials may include:	tests/trials to establish compliance with a standard, or to establish performance limits of product/materials or test/production plant/tooling/equipment/materials/ systems.
Stakeholders may include:	parties such as the design engineers, test/trial operators and corporate resource and budget managers with an interest in the test/trial conduct and/or outcome.
Test/trial plan may include:	covers the instrument detailing the objective(s), conduct, tasking and responsibilities, resource allocation and reporting and documentation requirements for the test/trial and is structured in accordance with endorsed organisations requirements

Unit Sector(s)

Unit sector	Technical - Tools and Equipment

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTM3001 Undertake preliminary fault finding and machine reset

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to enable an operator to perform a simple fault finding routine in a production environment and to respond appropriately. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for fault finding and machine reset	1.1. <i>Instructions</i> are read and interpreted, checklists and procedures are reviewed and responsibilities confirmed 1.2. Machines, equipment and/or for <i>preliminary fault finding and/or reset</i> are identified
2. Practise fault finding and machine reset	2.1. Check list, through phased fault finding steps is implemented 2.2. Faults and remedial action identified in accordance with check list 2.3. Machine is reset if appropriate in accordance with organisational procedures 2.4. Briefing the follow-up emergency repair team is conducted
3. Undertake housekeeping	3.1. Incidents are reported to appropriate personnel 3.2. Suggestions for improvements to the check list or machine operating procedures are reported 3.3. Validation of new process is conducted and workplace is restored

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working

REQUIRED SKILLS AND KNOWLEDGE

across a variety of work areas

- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- quality systems and performance measures
- established communication channels and protocols
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for preliminary fault finding and machine reset
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - following and executing preliminary fault finding check list
 - accurately documenting and reporting findings
 - achieving work quality goals
 - completing work area housekeeping requirements
- modify activities to cater for variations in organisation context and environment.

EVIDENCE GUIDE	
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
Instructions may include:	- organisation procedures relating to the use and operation of tools and equipment - production planning figures - organisation instructions, including job sheets, plans, specifications, drawings and designs - organisation procedures relating to reporting and communications - manufacturers' instructions for the use of equipment and materials.

RANGE STATEMENT

Preliminary fault finding and machine reset may include:

- following organisational checklists and routines to establish the nature of the stoppage and required remedial action. This may allow user action to remedy fault or require the call out of an emergency response team.

Unit Sector(s)

Unit sector	Technical -Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTM5002 Create new product designs

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to create new designs within the plant, tooling, equipment or systems required in the overall design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Establish design requirements	1.1. <i>Instructions</i> and plans are read and interpreted to identify processes and <i>materials</i> to complete work tasks 1.2. <i>Information</i> is assembled 1.3. Information gathered is analysed to develop key requirements needed in new design 1.4. Requirements of new design are documented
2. Identify constraints	2.1. <i>Constraints</i> on design concepts are identified and documented 2.2. Suitable strategies are developed to address identified constraints on designs
3. Create design concept	3.1. Initial design concept based on identified design requirements and constraints is created 3.2. Function, physical requirements and impact of the design concept are reviewed in conjunction with relevant stakeholders 3.3. Modifications to the initial design concept are made in accordance with feedback provided by relevant stakeholders
4. Produce design concept	4.1. Sketches are prepared to illustrate and explain proposed design concept(s) 4.2. Concept sketches are reviewed in consultation with relevant stakeholders and suitable changes made in accordance with a critical evaluation of the proposed design
5. Quantify design concept	5.1. Critical dimensions and data of the design concept are identified and quantified 5.2. Drawings are prepared to required accuracy to enable suitable manufacturing methods to be identified and evaluated 5.3. Draft product specifications are prepared in accordance with company procedures

ELEMENT	PERFORMANCE CRITERIA
6. Determine suitable methods, materials and processes	6.1.Components and sub-assemblies are drawn in accordance with design requirements 6.2.Suitable manufacturing methods are identified for the production of components and sub-assemblies to meet design requirements 6.3.Identified manufacturing methods for components and sub-assemblies are evaluated in conjunction with engineering staff 6.4.Suitable assembly and finishing methods for the purpose product design are identified and evaluated
7. Evaluate feasibility	7.1.Proposed design and the manufacturing processes are evaluated against the design requirements in conjunction with relevant stakeholders 7.2.Suitable trials and tests of the design are devised and conducted in conjunction with relevant stakeholders
8. Modify design	8.1.Product design is modified if necessary, based on the outcomes of the feasibility evaluations and trials 8.2.Further tests are conducted to confirm the suitability of the modified design against the identified design requirements 8.3.Outcomes of the modifications and testing of the new design concept are documented
9. Document design	9.1.All documentation requirements for the proposed new product design and associated manufacturing processes are identified 9.2.Design documentation is processed for approval 9.3.Design documentation is stored and distributed

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to consult with relevant stakeholders
- apply teamwork to a range of situations, particularly the trialling of designs to evaluate feasibility
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working

REQUIRED SKILLS AND KNOWLEDGE

across a variety of work areas

- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure designs are documented and processed according to organisation requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- product development/engineering area involving the mechanical, electrical and fabrication functions
- operation of systems and components
- operation of computers
- operation and selection of computer hardware and software applications/systems
- types of tools and equipment and procedures for their safe use, operation and maintenance
- established communication channels and protocols
- methods of interpreting and applying quality standards
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for creating new product designs
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - producing accepted designs
 - achieving work quality goals

EVIDENCE GUIDE	
	• completing work area housekeeping requirements including the documentation of project activity and process outcomes
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
Instructions may include:	• workplace procedures relating to the use and operation of tools and equipment • departmental requirements • Workplace instructions, including job sheets, plans, specifications, drawings and designs • workplace procedures relating to reporting and communications

RANGE STATEMENT	
	manufacturers' instructions for the use of equipment and materials.
Materials may include:	- metals - plastics - fibre glass - wood - foam - clay - other such materials used in the formation of product designs
Information may include:	- customer needs - competitor products - fashion trends - safety needs - relevant government policies - company production capability.
Constraints may include:	- market price - size - production capability - product complexity, etc.

Unit Sector(s)

Unit sector	Technical - Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTM5003 Develop conceptual models and prototypes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to develop and trial conceptual models and prototypes in the course of the design, development and production of motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine model/prototype requirements	1.1. Applicable <i>organisation requirements</i> relevant to the <i>development of conceptual models and prototypes</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Requirements of the client for the development of, or modifications to a conceptual <i>model/prototype</i> are assessed/rechecked in consultation with relevant stakeholders 1.4. Approval is sought for the proposed development of, or modifications to a conceptual model/prototype
2. Plan model/prototype-making activities	2.1. Steps involved in the development/modification of the model/prototype are identified in consultation with designated personnel 2.2. Inventory of required equipment, parts and components is established, including an assessment of their availability or the need to either manufacture or purchase them 2.3. Fabrication/machining processes and instructions are determined and clarified with participating departments/sections/areas 2.4. Timetable, resource requirements, personnel and purchase/supply schedule for the development or modifications to the model are confirmed in consultation with relevant personnel 2.5. The approved plan is communicated to all relevant personnel
3. Prepare tools and equipment	3.1. Required tools and equipment to construct or modify the model are selected 3.2. Necessary materials and components are obtained in accordance with design requirements

ELEMENT	PERFORMANCE CRITERIA
	3.3. Tools and equipment are prepared for use
4. Produce conceptual model/prototype	4.1. Concept is drafted and dimensions established including any required process allowances 4.2. Model/prototype is constructed to design requirements 4.3. Model/prototype is fabricated to meet design requirements 4.4. Model/prototype is discussed with designated design engineering and/or other personnel and suitably modified as required 4.5. Surfaces are prepared and painted as required
5. Test and modify model/prototype	5.1. Model/prototype is checked against project objectives and/or specifications and/or company standards 5.2. Model/prototype is tested and checked in accordance with specifications 5.3. Test results are analysed and appropriate action taken to modify the model/prototype, if necessary
6. Document design and testing details	6.1. Outcomes of development process and associated testing are documented 6.2. Model/prototype and associated documentation are referred to relevant stakeholders

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to develop project plans in consultation with relevant stakeholders
- apply teamwork to a range of situations, including the construction of models/prototypes
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure models/prototypes are checked and tested in accordance with specifications and company standards
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment
- methods for determining model/prototype requirements and producing models
- operation of systems and components
- operation and selection of computer hardware and software applications/systems
- evaluation techniques
- types of tools and equipment and procedures for their safe use, operation and maintenance
- established communication channels and protocols
- interpreting and applying quality standards
- procedures for the recording, reporting and maintenance of workplace records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for developing conceptual models and prototypes
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
- developing conceptual models that satisfy customer requirements
- achieving work quality goals
- accurate documentation of the prototype development process
- completing work area housekeeping requirements including the documentation of project activity and process outcomes.

Context of and specific

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle

EVIDENCE GUIDE	
resources for assessment	manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>Organisation requirements</i> may include:	- access and equity principles and practices - environmental management (waste disposal, recycling and re-use guidelines) - emergency and evacuation procedures - equipment use procedures - ethical standards - legal obligations - maintenance and storage procedures - OHS requirements - organisational and site guidelines

RANGE STATEMENT	
	• policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Development of conceptual models and prototypes may include:	developing and trialling conceptual models and prototypes, in consultation with professional and other relevant personnel, to aid the design, development and production of motor vehicles.
Instructions may include:	• workplace procedures relating to the use and operation of tools and equipment • departmental requirements • workplace instructions, including job sheets, plans, specifications, drawings and designs • workplace procedures relating to reporting and communications • manufacturers' instructions for the use of equipment and materials.
Model/prototype may include:	• models/prototypes formed using metal, plastics, clay, fibre glass, wood, foam, or other suitable material. Shaping may then be achieved through the development and use of moulds, templates, carving and computerised shaping equipment on these materials. The emphasis here is to produce a model/prototype that is suitable for the purpose for which it is being designed, not on its detailed construction.

Unit Sector(s)

Unit sector	Technical - Manufacture

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMFTQ3001 Install engine and drive train

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the skills and knowledge required to install engines, drive train assemblies and service line components in accordance with specifications. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select and use tools and equipment	1.1. Tools and equipment are selected to meet job requirements 1.2. Tools and equipment are regularly checked to ensure they are in good working order 1.3. Daily maintenance on tools and equipment is performed as specified 1.4. Appropriate lifting gear is selected and used in accordance with OH&S requirements
2. Select and use nuts, bolts, screws, washers and fasteners	2.1. Nuts, bolts, screws, washers and fasteners are identified and selected to meet the job requirements as stated in the materials list 2.2. Nuts, bolts, screws, washers and fasteners are fitted in the required number to the designated positions stated in the materials list and associated drawings 2.3. Size and position of holes drilled comply with drawing specifications
3. Install engine and drive train components	3.1. Materials list and drawings are correctly read and interpreted 3.2. Parts/components are matched with the materials list for the job specification 3.3. Parts/components are positioned and secured as per the relevant drawings/instructions 3.4. Specified nuts, bolts and screws are tensioned to the specification stated in the standard operating procedures 3.5. Installed components and sub-assemblies are inspected and checked for quality and specification 3.6. Workflow and production schedule are recorded and maintained
4. Route service lines	4.1. Materials list and drawing correctly read and interpreted 4.2. Appropriate nuts, bolts, screws, washers and fasteners are selected and used according to specification 4.3. Service lines are routed, tied and clipped to specification 4.4. Workflow and production schedule are recorded and

ELEMENT	PERFORMANCE CRITERIA
	maintained

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations, particularly in a safety context
- solve problems particularly in teams paying particular attention to safety issues and adjust performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- reading and interpreting materials lists and operating procedures
- types and purpose of engines/ transmission assemblies used within the industry
- the use and application of conveyor systems and transporting equipment (cranes, forklifts) and other tools, materials and equipment relevant to these processes
- types of components and their purpose within the sub assembly
- company/manufacturer policies and standard operational assembly and installation procedures
- work flow records - written / electronic

REQUIRED SKILLS AND KNOWLEDGE

- company OH&S procedures.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- install / fit engines, transmission and service lines to specification
- select appropriate parts / components, tools and equipment
- read and interpret materials lists, drawings and production schedules
- interpret and communicate operational information
- employ safe working practices
- maintain company records - paper based / electronic.

Context of and specific resources for assessment

Assessment must ensure:

- underpinning skill, knowledge and attitudes for each unit of competency in each work area, and for specific job roles within

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	work areas, will differ between enterprises, and will alter from time to time depending on factors such as changes in equipment, technology and culture • before skill, knowledge and attitudes development and assessment of the trainee begins, key operators in the area, in conjunction with trainers, union representatives and other stakeholders, must list the underpinning knowledge, skill and attitudes required to perform the unit competently (to standard). This will be used as a guide for training and assessment • The application of competency is to be assessed in the workplace or realistically simulated workplace • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints • assessment is to comply with relevant regulatory or Australian Standards requirements • assessment of the underpinning knowledge should be combined with assessment of the skill • assessment of the underpinning knowledge may take place on- or off-the-job • assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements and procedures may include:

- applicable legislation from all levels of government that affect organisational operations. Requirements may include but not be limited to award and enterprise agreements, industrial relations, employee relations, Australian Standards, confidentiality and privacy, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice and duty of care.

OH&S requirements may include:

- Commonwealth, State or Territory legislation and regulations, organisational safety policies and procedures. Requirements may include but not be limited to the use of personal protective equipment and clothing, rescue services, fire fighting organization and equipment, first aid equipment, hazard and risk control and elimination, systems covering of hazardous materials and substances and manual handling including lifting and carrying.

Enterprise requirements may include:

- legal
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- quality assurance
- procedural manuals
- quality and continuous improvement processes and standards
- OH&S
- emergency and evacuation
- ethical standards
- recording and reporting
- access and equity principles and practices
- equipment use
- maintenance and storage
- environmental management (waste disposal, recycling and re-use guidelines).

Job context may include:

- the job context is work area and process related
- work areas may include body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly,

RANGE STATEMENT	
	warehousing, engine assembly, seat frame manufacture • process may include welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Appropriate personnel may include:	• supervisors • team members • team leaders • suppliers • clients and managers.
Work quality goals may include:	• those established within each enterprise quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.
Changed work requirements may include:	• result from variations in process change • line speed • interruptions to parts supply/quality • personnel absences.
Cost reduction initiatives may include:	• cost benchmarks • waste avoidance • power conservation • productivity achievement • continuous improvement levels.
Sources of information may include:	• vehicle manufacturer specifications • product manufacturer specifications • company operating and assembly procedures • industry/workplace codes of practise • customer requirements • State/Territory/Federal statutory requirements(including ADRs) • State/industry OH&S legislation.
Resources may include:	• Hand tools, power tools, vehicle protection equipment, lifting equipment, scaffolds, impact guns • Equipment used may include conveyor equipment, tow motors, forklifts, mechanised pallet trucks and driverless tractors, robotic equipment • Jigs may include the use of quick release grips, screw grips and automatic grips • Parts may include raw materials, component parts, consumables, located in warehouse racks and aisles and will

RANGE STATEMENT

	also include seals, adhesives, sealants, gels and tapes • Service lines include: electrical wiring, pneumatic systems and hydraulic systems • work orders / job sheets • qualified workplace assessor • workplace or simulated workplace.

Unit Sector(s)

Unit sector	Technical - Driveline and Drivetrain (Final Drives)

Competency field

Competency field	Manufacturing - Passenger Motor Vehicle

Co-requisite units

Not applicable.

AUMGCA2001 Provide customer service

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to meet the needs and expectations of different types of customers when delivering quality service. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and assess the needs and expectations of different types of customers	1.1. Different <i>types of customers</i> are accurately identified 1.2. Individual customer needs and expectations are correctly identified and products and services appropriate to those needs and expectations are provided 1.3. All activities are carried out in accordance with <i>organisation requirements and procedures</i>
2. Provide high quality service to customer	2.1. Customer requests are responded to promptly and efficiently 2.2. Customers are treated in a manner which assists the development of a positive and professional relationship 2.3. Organisation services and products are appropriately promoted to encourage repeat business 2.4. Customer dissatisfaction is promptly recognised and attended to
3. Deal with difficult customers	3.1. The nature and details of the complaint are established and agreed upon with the customer 3.2. <i>Appropriate action</i> is taken to resolve the complaint to the customer's satisfaction wherever possible within the level of responsibility determined 3.3. The complaint is referred to <i>appropriate personnel</i> if the staff member cannot resolve the situation to the customer's satisfaction 3.4. Organisation documentation is completed in accordance with organisation requirements
4. Seek and action customer feedback	4.1. Feedback is sought from customers on the product provided 4.2. Alternative advice/actions are discussed with the customer 4.3. Appropriate action is taken in response to feedback 4.4. Customer feedback is documented in accordance with customer requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to promote organisation services and products
- apply teamwork to a range of situations, including meeting of the needs of difficult customers
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure appropriate action is taken in response to feedback
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- work documentation covering procedures, specifications, schedules and work plans or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- industry records and how to maintain them
- personal and equipment safety requirements
- conflict resolution techniques
- use of relevant communication mediums
- communication process, including verbal, written and electronic
- organisation policies.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment

EVIDENCE GUIDE	
Guidelines for this Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • customer needs are clarified • customer requirements are met • organisation documentation requirements are met • customer feedback is obtained.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions

EVIDENCE GUIDE

	(real or simulated) and require evidence of process assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Types of customers</i> may include:	Variations in: - age - personality - cultural background - potential areas of interest and need.
<i>Organisation requirements and procedures</i> may include:	- access and equity principles and practices - environmental management (waste disposal, recycling and re-use guidelines) - emergency and evacuation procedures - equipment use procedures - ethical standards - legal obligations - maintenance and storage procedures - OHS requirements - organisational and site guidelines - policies and procedures relating to own role and responsibility - procedural manuals - quality assurance guidelines - quality and continuous improvement processes and standards - recording and reporting guidelines.
<i>Appropriate action</i> may include:	Handling complaints: - sensitively - courteously

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	• discreetly.
<i>Appropriate personnel</i> may include:	• clients and managers • supervisors • suppliers • team leaders • team members.

Unit Sector(s)

Unit sector	Sales

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGLM3001 Comply with heavy vehicle modification standards

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes skills and knowledge to locate, interpret and apply the heavy vehicle modification standards in an automotive environment. Australian Design Rules (ADRs) and the VSB6 National Code of Practice for Heavy Vehicle Modifications apply to this unit at the time of endorsement. State and territory licensing requirements may also apply.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves the application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority. Work involves interpreting and applying heavy vehicle modification standards to commercial vehicles, heavy vehicles, agricultural /plant equipment and recreational vehicles to maintain compliance. Relevant areas of work may include body construction and design, engineering department, fabrication hardware, stamping and press operations, vehicle assembly and vehicle frame manufacture.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret heavy vehicle modification standards	1.1. <i>Heavy vehicle modification standards</i> are sourced 1.2. VSB6 specifications and ADR's are interpreted and applied to heavy vehicle construction and modification 1.3. Vehicle design drawings are interpreted correctly using <i>work quality goals</i>
2. Check heavy vehicle modification compliance	2.1. Compliance of engineering drawings and working drawings against VSB6 specifications is checked and non-compliances identified 2.2. Compliance of engineering drawings and working drawings against ADR's is checked and non-compliances identified 2.3. Compliance of engineering drawings and working drawings against <i>workplace policies and procedures</i> is checked and non-compliances identified 2.4. Compliance of engineering drawings and working drawings against manufacturer requirements is checked and non-compliances identified
3. Complete work requirements	3.1. VSB6 checklists are completed and signed by approved personnel 3.2. Non-compliances are reported to appropriate personnel for action 3.3. Relevant workplace documentation is completed and submitted as required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- apply communication skills, speak clearly and directly in order to coordinate activities
- apply teamwork skills when sharing gathered information with others in the workplace
- apply planning and organisation skills to a range of situations, including application of quality standards
- apply problem-solving skills to meet performance indicators
- listen to and interpret verbal feedback
- show initiative in adapting to changing work conditions
- access, interpret and apply information, procedures and instructions
- manage time when planning, preparing and organising work priorities
- use technology to research VSB6 specifications, ADR's, workplace policies and procedures and manufacturer requirements
- read and interpret VSB6 specifications, ADR's, workplace policies and procedures and manufacturer requirements
- complete workplace documentation such as compliance checklists
- read and interpret engineering drawings and working drawings
- make and compare measurements
- select, calibrate and use measuring devices
- identify non-conformances against standards.

Required knowledge

- relevant Occupational Health and Safety (OHS) regulations and workplace policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment
- cost minimisation and waste avoidance policies, procedures and practices
- environmental protection relating to the disposal of waste material
- problem identification and resolution techniques
- inspection techniques, including observation and measurement
- content of VSB6 including technical requirements and the use of checklists
- content of ADR's including their structure, applicability and relationship to VSB6
- content of workplace policies and procedures and manufacturer requirements relevant to heavy vehicle modification compliance
- workplace reporting requirements.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.

A person who demonstrates competency in this unit must be able to:

- source, interpret and apply VSB6 specifications, ADR's , workplace policies and procedures and manufacturer requirements to heavy vehicle construction and modification
- check compliance of engineering drawings and working drawings against VSB6 specifications, ADR's , workplace policies and procedures and manufacturer requirements
- record compliance checks and report non-conformances.

Context of, and specific resources for assessment

Competency is to be assessed in the workplace or a simulated workplace environment that accurately reflects performance in a real workplace setting.

Assessment is to occur:

- using standard workplace practices and procedures
- following safety requirements
- applying environmental constraints.

Assessment is to comply with relevant:

- regulatory requirements
- Australian standards
- industry codes of practice.

The following resources must be made available for the assessment of this unit:

- computer with internet access
- engineering drawings and working drawings
- workplace policies and procedures.

Method of assessment

Assessment must satisfy the endorsed Assessment Guidelines of this Training Package.

Assessment methods must confirm consistency and accuracy of

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	performance (over time and in a range of workplace relevant contexts) together with the application of required skills and knowledge. Assessment methods must be by direct observation of tasks and include questioning on required skills and knowledge to ensure correct interpretation and application. Competence in this unit may be assessed in conjunction with other units which together form part of a holistic work role. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate the needs of diverse clients. Assessment processes and techniques must be culturally sensitive and appropriate to the language, literacy and numeracy capacity of the candidate and the work being performed.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Heavy vehicle modification standards</i> include:	• VSB6 National Code of Practice for Heavy Vehicle Modifications • ADRs relevant to heavy vehicle modifications.
<i>Work quality goals</i> may include:	• compliance with VSB6 specifications • compliance with ADR's • compliance with workplace policies and procedures • compliance with manufacturer requirements.
<i>Workplace policies and procedures</i> may include:	• environment and sustainability • job specifications • manufacturer specifications and industry codes of practice • OHS • quality policies and procedures, including Australian standards • recording and reporting procedures • safe work procedures.

Unit Sector(s)

Unit sector	Regulatory or Legal – Manufacture

Competency field

Competency field	Manufacturing – Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGMA3001 Participate in workplace productivity

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit identifies the competence required to identify procedural changes to improve productivity, recommend equipment which will enhance productivity and communicate with staff on productivity related matters. The required outcomes specified in this unit of competency contain applicable facets of employability skills. These are listed under <i>Required Skills</i> and further summarised in the Qualifications Employability Skills Summary in the Training Package.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify procedures to improve workplace productivity	1.1. Efficiency of current processes is monitored using available enterprise resources 1.2. New technology and procedures which will improve productivity are identified and referred to appropriate personnel 1.3. Procedures should include legislative, OH&S and enterprise requirements and procedures
2. Recommend equipment requirements to management	2.1. Knowledge of relevant technological developments is maintained regarding new equipment 2.2. Appropriate new/replacement equipment recommendations are made to management 2.3. Effect of current and required equipment on workplace productivity is assessed whilst observing the job context and work quality goals 2.4. Changed work requirements together with cost reduction initiatives are considered prior to communicating to management 2.5. Cost-to-benefit ratio for new or upgraded equipment is determined and a recommendation for type of equipment required is communicated to management if appropriate
3. Communicate with staff about workplace productivity	3.1. Staff meetings are organised and conducted to encourage staff to provide ideas on productivity improvement 3.2. Staff ideas for improvements are analysed and recommended to appropriate personnel if cost effective and feasible 3.3. Staff are informed of and enrolled in new improvement initiatives

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- Collect, organise and understand information related to job functions and the management of personal work
- Communicate ideas and information to enable confirmation of work requirements and specifications, cooperation with other workers and customers, and the reporting of work outcomes and problems
- Work with others and in a team by recognising dependencies and using co-operative approaches to optimise work flow, productivity, quality and cost controls/waste avoidance
- Use checking techniques to anticipate or clarify problems to avoid interruptions to work flows/processes and to avoid re-working and wastage
- Identify and respond to non-achievement of performance indicators
- Recognise and respond to circumstances outside instructions or personal competence
- Be proactive in influencing and achieving work goals
- Apply enterprise best practice and quality systems
- Plan and organise activities including the preparation and layout of the worksite and the obtaining of equipment and materials to avoid any back tracking, work flow interruptions or wastage
- Apply mathematical ideas and techniques to correctly complete measurements, calculate quantities and monitor usage rates
- Clarify and confirm work instructions
- Plan work within given task parameters
- Accept responsibility for given tasks
- Set, monitor and satisfy personal work goals

Required knowledge

- Relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation.
- Enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- Enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- Enterprise cost minimisation/waste avoidance policies, procedures and practices
- Established communication channels and protocols
- Problem identification and resolution techniques
- Communication/feedback methods - written , verbal
- Enterprise systems, processes and work quality requirements

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • Compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities • Monitoring existing operations and identifying areas for improvement • Identifying procedural changes to improve productivity • Recommending equipment/processes which will enhance productivity. • Working and communicating effectively and positively with others involved in the work • Applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to improving workplace productivity • effectively applying problem solving techniques
Context of and specific resources for assessment	• Underpinning skill, knowledge and attitudes for each unit of competency in each work area, and for specific job roles within work areas, will differ between enterprises, and will alter from time to time depending on factors such as changes in equipment, technology and culture • Before skill, knowledge and attitudes development and assessment of the trainee begins, key operators in the area, in conjunction with trainers, union representatives and other stakeholders, must list the underpinning knowledge, skill and attitudes required to perform the unit competently (to standard). This will be used as a guide for training and assessment • The application of competency is to be assessed in the workplace or realistically simulated workplace

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	• Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints • Assessment is to comply with relevant regulatory or Australian Standards requirements • Assessment of the underpinning knowledge should be combined with assessment of the skill • Assessment of the underpinning knowledge may take place on- or off-the-job • Assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
Method of assessment	• Assessment must take place in accordance with the endorsed <i>Assessment Guidelines for the Automotive Industry</i> • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • Assessment may be applied under project related conditions (real or simulated) and require evidence of process • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances • Assessment should be in conjunction with assessment of other units of competency

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements and procedures may include:

- are to be in accordance with applicable legislation from all levels of government that affect enterprise operations.

RANGE STATEMENT	
	Requirements and procedures may include but not be limited to award and enterprise agreements, employee relations, Australian Standards, confidentiality and privacy, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice and duty of care, ISO standards (quality management and environment)
<i>OH&S requirements and procedures</i> may include:	are to be in accordance with Commonwealth or State legislation and regulations, organisational safety policies and procedures. Requirements and procedures may include but not be limited to the use of personal protective equipment and clothing, rescue services, fire fighting organization and equipment, first aid equipment, hazard and risk control and elimination, control of hazardous materials and substances and manual handling including lifting and carrying
<i>Enterprise requirements and procedures</i> may include:	may include but not be limited to legal, organisational and site guidelines, policies and procedures relating to own role and responsibility, quality assurance, procedural manuals, quality and continuous improvement processes and standards, OH&S, emergency and evacuation, ethical standards, recording and reporting, access and equity principles and practices, equipment use, maintenance and storage, environmental management (waste disposal, recycling and re-use guidelines), suppliers' operating instructions
<i>Job context</i> may include:	- The job context is work area and process related. - Work areas may include body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture - process may include welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment
<i>Work quality goals</i> may include:	are those established within each enterprise quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products
<i>Changed work requirements</i> may include:	may result from variations in process change, line speed, interruptions to parts supply/quality and personnel absences
<i>Cost reduction initiatives</i>	may include but not be limited to cost benchmarks, waste

RANGE STATEMENT	
may include:	avoidance, power conservation, productivity achievement and continuous improvement levels
Sources of information may include:	• Company operating procedures • Product manufacturer specifications • Customer requirements • Industry/workplace codes of practice • State/industry OH&S legislation • Award provisions
Resources may include:	• Company standards documentation • Work orders, job cards, quotes/estimates, internal memoranda, file note, invoice, job specifications • Work reports - paper based / electronic • Work to be inspected • Qualified workplace assessor • Workplace or simulated workplace

Unit Sector(s)

Unit sector	Teamwork, Supervision and Management

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGMM3001 Contribute to workplace relationships and processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to work in a constructive and positive manner with others in the Automotive Bus/Truck/Trailer Manufacture and Assembly Industry. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Give and receive instructions, information and messages as required by the job	1.1. Instructions, information and messages are received and acted upon in accordance with <i>organisation requirements</i> 1.2. Instructions, messages and information received are confirmed with <i>appropriate personnel</i> 1.3. Instructions, information and messages are delivered using an appropriate communication technique and in an appropriate format which is understandable to the receiver/s 1.4. Feedback is sought from the person/s receiving the instructions, information or messages to ensure that the correct information has been received
2. Follow organisation diversity and equal opportunity policy and procedures	2.1. Organisation equal opportunity, diversity and related policies are identified 2.2. Personnel responsible for receiving complaints about breaches of organisational equal opportunity, diversity and related policies are identified 2.3. Organisation equal opportunity, diversity and related policies are followed
3. Identify procedures and processes for resolving conflict in the workplace	3.1. Processes within the organisation for resolving conflict and grievances are identified through appropriate <i>sources of information</i> 3.2. Processes within the organisation for resolving conflict and grievances are followed when required so that there is minimum disruption to production

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to confirm instructions and information with appropriate personnel
- apply teamwork to a range of situations, including the organising of equal opportunity policies
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure organisation processes for resolving conflict and grievances are adhered to
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- documentation covering procedures, specifications, schedules and work plans or equivalent
- established communication channels and protocols
- problem identification and resolution techniques
- occupational Health and Safety and EEO policies and procedures
- format of common organisation communication techniques, including memos, e-mails, telephone conventions
- conflict resolution techniques
- contract of Employment.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards,

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competency in this unit	codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • complete organisation documentation - written and/or electronic • give and receive instructions in the organisation • implement organisation EEO policy • resolve conflict in the workplace according to organisation policy and procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Sources of information may include:

- organisation regulations, policies and procedures including organisation OHS and EEO policy and procedures
- standard operating procedures
- contract of employment.

Unit Sector(s)

Unit sector

Teamwork, Supervision and Management

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGQA3001 Inspect work and apply organisation technical quality standards

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to inspect the work done against job specification and organisation standards; apply quality standards to work; and protect organisation property and customer interests. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect work done against job specification	1.1. Appropriate inspections are conducted to ensure <i>work quality goals</i> are maintained/followed 1.2. Job specification/work order and quality standards are identified 1.3. Faults are identified and processed according to <i>organisation requirements</i>
2. Apply quality standards to work	2.1. Appropriate quality standards are applied throughout the manufacturing processes 2.2. All activities are co-ordinated throughout the <i>work area</i> to ensure efficient quality work outcomes 2.3. Records of work quality are maintained according to the requirements of the organisation
3. Protect organisation property and customer interests	3.1. Possible damage to organisation property is avoided by adherence to organisation quality procedures 3.2. Quality of work is reviewed to ensure customer requirements and organisation standards are met

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to co-ordinate activities between personnel
- apply teamwork to a range of situations, including the application of quality standards throughout the manufacturing process
- solve problems particularly in teams in order to meet performance indicators

REQUIRED SKILLS AND KNOWLEDGE

- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure damage to property is avoided
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- communication/feedback methods
- organisation systems, processes and work quality requirements
- work inspection techniques, including observation, written reports and mechanical tests
- quality assurance principles.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with

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	others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • inspect and apply quality standards to work done. • protect organisation property and customer interests • conduct periodic inspections during the job • observe and assess work against work specifications at completion of the job • check and complete documentation requirements - written / electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Work quality goals may include:

those established within a quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Work area may include:

- body construction
- aluminium die casting
- iron foundry operations
- engine machining
- spray painting
- automotive plastics
- stamping & press operations
- fabrication hardware
- trim manufacture
- vehicle assembly
- warehousing
- engine assembly
- seat frame manufacture.

Unit Sector(s)

Unit sector	Quality

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTA2001 Read and interpret working drawings and work orders

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to read and interpret work drawings and work orders and determining processes required for production. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Read and interpret working drawings and work orders	1.1. Symbols, codes, legends and diagrammatic representations are correctly recognised 1.2. Product/system/component/item represented is correctly identified 1.3. Information represented is correctly understood
2. Initiate work order for production	2.1. Processes to be used are identified 2.2. Material requirements are identified 2.3. Production processes are initiated in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- apply teamwork to a range of situations, such as meeting production requirements
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure production processes are initiated in accordance with organisation requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques.
- measuring procedures - use of rulers /tapes / squares
- reading and interpreting working drawings/job specifications and standards
- product manufacturer drawing standards and practices
- manufacture and assembly processes
- company policies and procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals

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	• responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in workplace context and environment • read and interpret work drawings/work orders • establish job processes and material requirements.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

RANGE STATEMENT

Information may include:	• manufacturer specifications • company operating procedures • working/engineering drawings • product manufacturer specifications • customer requirements • industry/workplace codes of practice • State/industry OH&S legislation • award provisions.
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTA3002 Service after assembly

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the skills and knowledge required to service after assembly through the application of fluids and lubricants and the bleeding of air and hydraulic systems. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work activity	1.1. Appropriate practices are identified and followed in accordance with <i>OHS requirements</i>, standard operating procedures and <i>organisation requirements</i> 1.2. Tools and equipment are selected to meet job requirements 1.3. Tools and equipment are checked to ensure they are in working order
2. Select and use lubricants and fluids	2.1. <i>Lubricants</i> and fluids are selected and matched to the vehicle by codes and numbers as stated on the lubrication data sheets/materials lists 2.2. Lubricants and fluids are used on the identified parts of the vehicle 2.3. Reservoirs and mechanical assemblies are filled with the identified lubricant/fluid to levels specified 2.4. Excess lubricants and fluids are removed
3. Bleed air and hydraulic systems	3.1. Bleeding points for air and hydraulic systems are located as shown in the company procedures 3.2. Hydraulic systems are bled in line with organisation procedures 3.3. Air systems are bled in line with organisation procedures
4. Complete work requirements	4.1. Appropriate forms are selected for recording and reporting identified faults 4.2. Faults are reported to appropriate personnel for action 4.3. Service check lists are completed and signed by <i>authorised personnel</i> 4.4. Workflow and production schedule are recorded and maintained

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to report faults to appropriate personnel
- apply teamwork to a range of situations to maintain production schedules
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure compliance during manufacture
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- reading and interpreting materials lists and operating procedures
- types and purpose of air and hydraulic systems and assemblies used within the industry
- types and characteristics of lubricants and fluids used within the operating systems
- application of lubricating systems and their operational procedures
- service lines and components and their purpose within the assembly
- relevant company/manufacturer policies and standard operational assembly and installation procedures
- work flow records - written / electronic
- company OH&S procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- read and interpret job sheets and data sheets
- select and use appropriate lubricants, special fluids and coolants
- service air and hydraulic systems/components
- employ of safe working practices
- select and use relevant tools and equipment
- maintain company records - paper based / electronic.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of

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	performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals

RANGE STATEMENT	
	• quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Lubricants may include:	• engine oils, heavy duty oils, special fluids and coolants
Authorised personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.

Unit Sector(s)

Unit sector	Technical

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTB3001 Assemble and install braking system kit

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to assemble, install and test braking systems and associated components including hydraulic, pneumatic, electric and mechanical operating systems. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan the job	1.1. Work specification is read and interpreted to determine installation process 1.2. Components required are determined 1.3. <i>Tools and equipment</i> are determined
2. Assemble and install braking system kit	2.1. Assembly and installation activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 2.2. Assembly and installation information is accessed and interpreted from manufacturer specifications 2.3. Braking system kit is assembled in accordance with appropriate <i>sources of information</i> 2.4. Installation procedures are carried out in accordance with manufacturer specifications and tolerances
3. Test braking systems	3.1. Test information is accessed and interpreted from manufacturer specifications 3.2. System tests before and or after installation are carried out in accordance with manufacturer specifications and tolerances

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate effectively with team members during installation process
- apply teamwork to a range of situations

REQUIRED SKILLS AND KNOWLEDGE

- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly regarding the safe assembly and installation of braking system kits
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- braking systems operating principles
- statutory legislation where applicable
- types of materials and their application
- brake lines, fabrication and routing procedures
- methods of fastening
- assembly and fitting procedures
- brake system test procedures
- lubricant and brake fluid types and applications

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards,

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required to demonstrate competency in this unit	codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • assemble and install components • route service lines • employ safe working practices • test systems.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Tools and equipment</i> may include:	• hand tools and power tools, • cutting equipment, measuring equipment, lifting equipment, brake bleeding equipment, testing equipment (eg brake dynamometer).
<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
<i>Sources of information</i> may include:	• customer requirements • industry/organisation codes of practice • manufacturer specifications • organisational operating procedures • OHS legislation.

Unit Sector(s)

Unit sector	Technical - Brakes

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTD3001 Perform wheel alignment operations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to perform wheel alignment operations within the Truck/Bus/Trailer Manufacture and Assembly industry. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for the job	1.1. Work specification is read and interpreted to determine alignment process 1.2. Wheel alignment pre-checks are completed in accordance with organisation requirements 1.3. Tools and equipment are determined and alignment measuring equipment connected to the vehicle
2. Perform wheel alignment	2.1. Wheel alignment equipment information is accessed and interpreted from manufacturer specifications 2.2. Wheel alignment procedures are undertaken in accordance with organisation procedures 2.3. Adjustments are undertaken in accordance with the vehicle and equipment manufacturers specifications

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed work
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure correct adjustments are made during wheel alignments
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation.
- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- organisation cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- wheel alignment principles and purposes
- equipment operating principles and alignment procedures
- safe use of equipment

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques

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	• modify activities to cater for variations in organisation context and environment • set equipment for alignment • interpret alignment information • align wheels to specifications • complete documentation requirements - written / electronic • use relevant tools and equipment • employ organisation OHS procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

RANGE STATEMENT

Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Tools and equipment may include:	• hand tools, power tools, special tools • mechanical equipment for wheel alignment, laser alignment equipment.

Unit Sector(s)

Unit sector	Technical - Steering and Suspension

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTG3001 Install fixed and moveable glass components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to fabricate templates, mark out and cut panels, prepare cut edges and remove and install fixed and moveable body glass components. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Measure, mark out and fabricate templates	1.1. Fabricating, measuring and marking out activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Relevant information is accessed and interpreted from appropriate <i>sources of information</i> 1.3. Suitable materials are selected and templates fabricated to required shape and size
2. Mark out in preparation for installation of components	2.1. Job information is accessed and interpreted from work orders and appropriate manufacturer specifications 2.2. The template is used to mark out areas which are then cut using approved methods and equipment 2.3. Panels/trims are prepared in readiness for installing components
3. Install/Remove body glass components	3.1. The removal / installation of body glass components is carried out in accordance with vehicle manufacturer specifications and tolerances 3.2. Installed components are checked for correct operation and leak tested as necessary

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to interpret and confirm job tasks
- apply teamwork to a range of situations

REQUIRED SKILLS AND KNOWLEDGE

- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to safely and accurately cut appropriate materials
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- measuring and marking out procedures
- relevant cutting procedures (panels and trim)
- relevant organisation/manufacture policies
- fixed, bonded, and moveable glass component installation procedures
- panel reinforcing methods
- urethane, rubber, butyl, and encapsulated installation methods
- bonded glass installation methods

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- Compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities

EVIDENCE GUIDE

	• Maintaining a working knowledge of current work systems and practices • Working and communicating effectively and positively with others involved in the work • Applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • Modify activities to cater for variations in organisation context and environment • Prepare and install fixed and moveable glass components • Interpret and communicate job information • Select appropriate component, glass sealants, adhesives, tools and equipment • Install/remove/replace/adjust fixed and moveable glass components • Mark out and fabricate templates • Ensure correct functions of accessories (eg. demisters, washer/wipers, doors etc.) • Employ safe working practices • Leak test installed glass components
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process

EVIDENCE GUIDE

	assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Sources of information may include:

- customer requirements
- industry/organisation codes of practice
- manufacturer specifications

RANGE STATEMENT

	- organisational operating procedures - OHS legislation.

Unit Sector(s)

Unit sector	Technical - Glazing

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTM2001 Assemble components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the skills and knowledge required for the preparation, transportation and assembly of components for vehicle completion or for mounting on a chassis. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Obtain materials/parts for job	1.1. Materials/parts list is read and interpreted to establish requirements for the job 1.2. Parts are picked by matching part numbers and stacked in the appropriate bin/container 1.3. Parts and materials are transported to identified assembly points to ensure smooth, continuous production 1.4. Details of materials/parts received and used are recorded on the stock control system to provide an accurate record of inventory and stock movement
2. Select and use tools and equipment	2.1. Tools and equipment are selected to meet job requirements 2.2. Tools and equipment are checked to ensure they are in good working order
3. Load and unload parts onto jigs	3.1. Parts are matched to the jiggling equipment on the basis of part numbers and codes 3.2. Parts correctly aligned with the predetermined points on the jig bed to minimise waste 3.3. Parts are securely clamped to prevent movement and distortion during the assembly operation as specified in the standard operating procedures
4. Select and use adhesives, sealants and solvents	4.1. Adhesives, sealants and solvents are selected and applied to meet the job requirements stated in the production schedule 4.2. Solvents are selected and used to remove excess adhesives and sealants to ensure finished product meets company quality control standards 4.3. Major spills are reported to the appropriate safety personnel and cleaned up in accordance with emergency procedures for hazardous materials
5. Select and use nuts, bolts, screws, washers and fasteners	5.1. Nuts, bolts, screws, washers and fasteners are identified and selected to meet the job requirements as stated in the materials list

ELEMENT	PERFORMANCE CRITERIA
	5.2.Nuts, bolts, screws, washers and fasteners are fitted in the required number to the designated positions stated in the materials list and associated drawings 5.3.Company OH&S requirements are observed
6. Assemble components	6.1.Materials list and drawings are correctly read and interpreted 6.2.Parts/components are matched with the materials list for the particular component 6.3.Parts/components are positioned and secured as per the relevant drawings/instructions 6.4.Specified nuts, bolts and screws are tensioned to the specification stated in the standard operating procedures 6.5.Assemblies are inspected and checked for quality and specification 6.6.Identified faults are recorded, reported and rectified/reworked/scrapped in accordance with company procedures 6.7.Workflow and production schedule are recorded and maintained

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills

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Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material

REQUIRED SKILLS AND KNOWLEDGE

- established communication channels and protocols
- problem identification and resolution techniques
- reading and interpreting materials lists and operating procedures
- seals/sealants, adhesives, solvents, related chemicals and their properties
- the use and application of conveyor systems and transporting equipment (mobile cranes / forklifts) and other tools, materials and equipment relevant to these processes
- components and their purpose within the assembly
- company/manufacturer policies and procedures
- work flow records - written / electronic
- company OH&S procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- read and interpret materials lists, drawings and production schedules

EVIDENCE GUIDE	
	• select appropriate parts/components, tools and equipment • assemble and install components to specification • employ safe working practices • maintain company records - paper based / electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>Legislative requirements</i> and procedures may include:	• applicable legislation from all levels of government that affect organisational operations. Requirements may include but not be limited to award and enterprise agreements, industrial relations, employee relations, Australian Standards, confidentiality and privacy, the environment, equal opportunity,

RANGE STATEMENT	
	anti-discrimination, relevant industry codes of practice and duty of care.
OH&S requirements may include:	Commonwealth, State or Territory legislation and regulations, organisational safety policies and procedures. Requirements may include but not be limited to the use of personal protective equipment and clothing, rescue services, fire fighting organization and equipment, first aid equipment, hazard and risk control and elimination, systems covering of hazardous materials and substances and manual handling including lifting and carrying.
Enterprise requirements may include:	- legal - organisational and site guidelines - policies and procedures relating to own role and responsibility - quality assurance - procedural manuals - quality and continuous improvement processes and standards - OH&S - emergency and evacuation - ethical standards - recording and reporting - access and equity principles and practices - equipment use - maintenance and storage - environmental management (waste disposal, recycling and re-use guidelines).
Job context may include:	- the job context is work area and process related - work areas may include body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture - process may include welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Appropriate personnel may include:	- supervisors - team members - team leaders - suppliers - clients and managers.

RANGE STATEMENT	
Work quality goals may include:	those established within each enterprise quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.
Changed work requirements may include:	- result from variations in process change - line speed - interruptions to parts supply/quality - personnel absences.
Cost reduction initiatives may include:	- cost benchmarks - waste avoidance - power conservation - productivity achievement - continuous improvement levels.
Sources of information may include:	- vehicle manufacturer specifications - product manufacturer specifications - company operating and assembly procedures - industry/workplace codes of practise - customer requirements - State/Territory/Federal statutory requirements(including ADRs) - State/industry OH&S legislation.
Resources may include:	- Hand tools, power tools, vehicle protection equipment, lifting equipment, scaffolds, impact guns - Equipment used may include conveyor equipment, tow motors, forklifts, mechanised pallet trucks and driverless tractors, robotic equipment - Jigs may include the use of quick release grips, screw grips and automatic grips - Parts may include raw materials, component parts, consumables, located in warehouse racks and aisles and will also include seals, adhesives, sealants, gels and tapes - Component parts may include doors, hoods, panels, bonnets, seats, hand rails, windows, safety belts, locks, hinges, fasteners - work orders / job sheets - qualified workplace assessor - workplace or simulated workplace.

Unit Sector(s)

Unit sector	Technical - Manufacture

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTM2004 Install and fit out components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to install/fit out sub-assemblies and components to truck/bus/trailer assemblies to organisation standards. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select and use tools and equipment	1.1. <i>Tools and equipment</i> are selected to meet job requirements 1.2. Daily maintenance on tools and equipment is performed as specified
2. Select and use nuts, bolts, screws, washers and fasteners	2.1. Nuts, bolts, screws, washers, rivets and fasteners are identified and selected to meet the job requirements as stated in the production schedule 2.2. Nuts, bolts, screws, washers, rivets and fasteners are fitted in the required number to the designated positions stated in the production schedule and associated drawings
3. Install/fit out components and sub-assemblies	3.1. Materials list and drawings are correctly read and interpreted. 3.2. Parts and <i>components</i> are matched with the materials list and are positioned and secured as per job specification 3.3. Installed components and sub-assemblies are inspected and checked for quality and specification
4. Route service lines	4.1. Routing requirements are identified and located on the job according to job requirement 4.2. <i>Service lines</i> are routed, tied and clipped to specification 4.3. Workflow and production schedule are recorded and maintained
5. Select and use adhesives, sealants and solvents	5.1. Adhesives are selected and applied to meet quality control and the job requirements stated in the production schedule 5.2. Solvents are selected and used to remove excess adhesives and sealants to ensure finished product meets organisation quality control standards 5.3. Major spills are reported to the <i>appropriate personnel</i> and cleaned up in accordance with emergency procedures for hazardous materials

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate hazards to safety personnel
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to identify appropriate adhesives and solvents
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- procedures for the safe and efficient installation of components and sub-assemblies
- organisation installation processes
- characteristics and application of vinyls, laminates, plastics, timber, composites, fabrics
- procedures for routing service lines
- tensions required for critical bolts
- organisation quality standards
- organisation work flow records
- organisation OHS policy and procedures
- manual handling processes.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
 - modify activities to cater for variations in workplace context and environment
- install/fit out components and sub-assemblies in accordance with the production schedule
- route service lines
- attain quality standards
- produce work flow records - paper based / electronic
- apply organisation OHS policy and procedures.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of

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	performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Tools and equipment</i> may include:	• spanners • impact guns • screwdrivers • sockets • torque wrenches • robotic equipment.
<i>Components</i> may include:	• glass • soft trim components • mirror • hand rails • seats • accessories • floor coverings.
<i>Service lines</i> may include:	• electrical wiring • pneumatic systems • hydraulic systems.
<i>Appropriate personnel</i> may include:	• managers • supervisors

RANGE STATEMENT

	• team leaders • team members.

Unit Sector(s)

Unit sector	Technical - Manufacture

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTM3002 Assemble frame and axle

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the skills and knowledge required to fit out of axles, suspension and associated service systems and components. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select and use tools and equipment	1.1. Tools and equipment are selected to meet job requirements 1.2. Tools and equipment are checked to ensure they are in good working order
2. Cut, drill and weld chassis frame	2.1. Drawings and work orders are read and interpreted to establish work requirements 2.2. Appropriate lifting gear is selected and used in accordance with OH&S requirements 2.3. Chassis rails are cut to the length and profile specified in the drawing/work order 2.4. Size and position of holes drilled complies with drawing specifications 2.5. Chassis rails are welded in accordance with company procedures and drawing specification
3. Select and use nuts, bolts, screws, washers and fasteners	3.1. Nuts, bolts, screws, washers and fasteners are identified and selected to meet the job requirements as stated in the materials list 3.2. Nuts, bolts, screws, washers and fasteners are fitted in the required number to the designated positions stated in the materials list and associated drawings
4. Fit axles, valves, suspension, brackets and fixtures	4.1. Materials list, drawings and work orders are read and interpreted to establish work requirements 4.2. Appropriate lifting gear selected and used according to OH&S requirements 4.3. Appropriate nuts, bolts, screws, washers and fasteners are selected and used according to specification 4.4. Critical bolts are tensioned to specification 4.5. Workflow and production schedule are recorded and maintained
5. Route service lines	5.1. Materials list, drawings and work orders are read and

ELEMENT	PERFORMANCE CRITERIA
	interpreted to establish work requirements 5.2. Appropriate nuts, bolts, screws, washers and fasteners are selected and used according to specification 5.3. Service lines are routed, tied and clipped to specification 5.4. Workflow and production schedule are recorded and maintained

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- reading and interpreting materials lists and operating procedures
- types of sealants, adhesives, solvents, related chemicals and their properties
- the use and application of conveyor systems and transporting equipment (mobile cranes / forklifts) and other tools, materials and equipment relevant to these processes
- types of components and their purpose within the assembly
- types and application of service systems
- relevant company/manufacturer policies and standard operational procedures
- work flow records - written / electronic
- company OH&S procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- modify frames
- assemble frames
- fit out axles, suspension and associated service systems to the frame
- maintain company records - paper based / electronic.

Context of and specific resources for assessment

Assessment must ensure:

- underpinning skill, knowledge and attitudes for each unit of competency in each work area, and for specific job roles within work areas, will differ between enterprises, and will alter from time to time depending on factors such as changes in equipment, technology and culture
- before skill, knowledge and attitudes development and assessment of the trainee begins, key operators in the area, in conjunction with trainers, union representatives and other stakeholders, must list the underpinning knowledge, skill and attitudes required to perform the unit competently (to standard). This will be used as a guide for training and assessment

EVIDENCE GUIDE

	• The application of competency is to be assessed in the workplace or realistically simulated workplace • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints • assessment is to comply with relevant regulatory or Australian Standards requirements • assessment of the underpinning knowledge should be combined with assessment of the skill • assessment of the underpinning knowledge may take place on- or off-the-job • assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Legislative requirements</i> and	• applicable legislation from all levels of government that affect

RANGE STATEMENT	
procedures may include:	organisational operations. Requirements may include but not be limited to award and enterprise agreements, industrial relations, employee relations, Australian Standards, confidentiality and privacy, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice and duty of care.
OH&S requirements may include:	Commonwealth, State or Territory legislation and regulations, organisational safety policies and procedures. Requirements may include but not be limited to the use of personal protective equipment and clothing, rescue services, fire fighting organization and equipment, first aid equipment, hazard and risk control and elimination, systems covering of hazardous materials and substances and manual handling including lifting and carrying.
Enterprise requirements may include:	- legal - organisational and site guidelines - policies and procedures relating to own role and responsibility - quality assurance - procedural manuals - quality and continuous improvement processes and standards - OH&S - emergency and evacuation - ethical standards - recording and reporting - access and equity principles and practices - equipment use - maintenance and storage - environmental management (waste disposal, recycling and re-use guidelines).
Job context may include:	- the job context is work area and process related - work areas may include body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture - process may include welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Appropriate personnel may include:	- supervisors - team members

RANGE STATEMENT	
	• team leaders • suppliers • clients and managers.
Work quality goals may include:	• those established within each enterprise quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.
Changed work requirements may include:	• result from variations in process change • line speed • interruptions to parts supply/quality • personnel absences.
Cost reduction initiatives may include:	• cost benchmarks • waste avoidance • power conservation • productivity achievement • continuous improvement levels.
Sources of information may include:	• vehicle manufacturer specifications • product manufacturer specifications • company operating and assembly procedures • industry/workplace codes of practise • customer requirements • State/Territory/Federal statutory requirements(including ADRs) • State/industry OH&S legislation.
Resources may include:	• Hand tools, power tools, vehicle protection equipment, lifting equipment, scaffolds, impact guns • Equipment used may include conveyor equipment, tow motors, forklifts, mechanised pallet trucks and driverless tractors, robotic equipment • Jigs may include the use of quick release grips, screw grips and automatic grips • Parts may include raw materials, component parts, consumables, located in warehouse racks and aisles and will also include seals, adhesives, sealants, gels and tapes • Service lines include: electrical wiring, pneumatic systems and hydraulic systems • work orders / job sheets • qualified workplace assessor • workplace or simulated workplace.

Unit Sector(s)

Unit sector	Technical - Manufacture

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTM3003 Install or replace mechanical units and assemblies

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to install or replace units/assemblies. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Install and test mechanical units/assemblies	1.1. Installation and testing activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Appropriate fittings and materials are selected for the installation 1.3. Appropriate <i>tools and equipment</i> are used for the installation and testing processes
2. Remove, replace and test mechanical units/assemblies	2.1. Appropriate information is accessed and interpreted from appropriate manufacturer specifications 2.2. Protective clothing and equipment appropriate to the replacement activities is used 2.3. Mechanical units/assemblies are replaced and tested

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed work and work processes
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to the removal of units and assemblies
- manage time when planning, preparing and organising work priorities

REQUIRED SKILLS AND KNOWLEDGE

- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- use of relevant tools and equipment
- use of lifting and transportation equipment (cranes, trolleys, forklifts)
- installation or replacement procedures for mechanical units/assemblies
- testing equipment and application procedures for mechanical units/assemblies
- unit/assembly operating principles

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:

EVIDENCE GUIDE	
	• achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • employ safe working practices • install or replace mechanical units/assemblies • test installation.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present

RANGE STATEMENT

with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Tools and equipment may include:

- hand tools, jacking, support and lifting equipment, power tools, air tools
- special equipment for installation and replacement.

Unit Sector(s)

Unit sector	Technical - Manufacture

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTM3005 Read and interpret engineering drawings and job specifications

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to read and interpret engineering drawings and job specifications/sheets and determine processes and materials lists required for production. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Read and interpret engineering drawings	1.1. Symbols, codes, legends and diagrammatic representations are correctly recognised 1.2. Product/system/component/item represented is correctly identified 1.3. Information represented is correctly understood
2. Determine processes to be used and prepare materials lists from engineering drawings	2.1. Processes to be used are identified 2.2. Material requirements are identified 2.3. Work orders for production are initiated in accordance with company procedures
3. Read and interpret job specification and work orders	3.1. Materials and process requirements are identified and prepared for production 3.2. Specific customer/job requirements are identified 3.3. Job requirements are clarified with appropriate personnel

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to clarify job requirements with appropriate personnel
- apply teamwork to a range of situations, including the preparation of materials and process requirements
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and

REQUIRED SKILLS AND KNOWLEDGE

instructions, particularly to ensure engineering drawings are correctly interpreted

- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation.
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- measuring procedures - use of rulers / tapes / squares
- reading and Interpreting basic drawings/job specifications and company work orders
- product manufacturer engineering drawing standards and practices
- manufacture and assembly processes
- company policies and procedures - paper based / electronic.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work

EVIDENCE GUIDE

	• applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in workplace context and environment • establish and quantify design requirements • determine suitable production methods, materials and processes • identify design constraints • produce concept sketches and evaluate feasibility. • modify and document designs - paper based / electronic • read and Interpret engineering drawings/job specifications • establish job processes and material requirements.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements and procedures may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

RANGE STATEMENT	
Job context may include:	• Work areas including: • body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture Processes including: • welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.
Work quality goals may include:	those established within a quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.
Changed work requirements may include:	• interruptions to parts supply/quality • line speed • personnel absences and the needing to fill production line gaps.
Cost reduction initiatives may include:	• continuous improvement programs • cost benchmarks • power conservation • productivity achievement • waste avoidance.
Sources of information may include:	• customer requirements • industry/workplace codes of practice • manufacturer specifications • organisational operating procedures • OHS legislation.
Resources may include:	• plant • tooling and equipment to be designed (as per company installation) • documentation and reporting systems (as per company requirements) - written / electronic, drawing equipment - manual, graphics

RANGE STATEMENT

	• CAD system • access to professional staff • qualified workplace assessor • workplace or simulated workplace.

Unit Sector(s)

Unit sector	Technical - Manufacture

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTM3006 Assemble and install hydraulic system kit

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of skills and knowledge required to assemble, install and test a hydraulic system kit. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text

of competency.	is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan the job	1.1. Appropriate practices are identified and followed in accordance with OHS policy, standard operating procedures legislative and organisation requirements 1.2. Tools and equipment are selected to meet job requirements 1.3. Tools and equipment are checked to ensure they are in working order 1.4. Assembly and installation information is accessed and interpreted from manufacturer specifications
2. Assemble and install hydraulic system kit	2.1. Hydraulic system kit is assembled in accordance with manufacturers specifications 2.2. Installation procedures are carried out in accordance with manufacturer specifications and tolerances
3. Test hydraulic systems	3.1. Test information is accessed and interpreted from manufacturer specifications 3.2. System tests before or after installation are carried out in accordance with manufacturer specifications and tolerances

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to maintain teamwork
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure safety and compliance
- manage time when planning, preparing and organising work priorities

REQUIRED SKILLS AND KNOWLEDGE

- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- relevant technical information including graphical symbols
- design and sketch hydraulic circuitry diagrams
- types of hydraulic fluids and their application
- equipment safety requirements
- hydraulic system operating principles
- hydraulic systems/component installation and test procedures
- construction and operation of hydraulic systems relevant to application
- manual handling techniques
- aural, visual and functional assessments (including damage, corrosion, fluid levels, leaks, tests, wear and safety aspects).

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and

EVIDENCE GUIDE

	practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in workplace context and environment • assemble hydraulic system/components • install hydraulic system/components • test hydraulic system • use relevant tools and equipment • apply manual handling techniques • employ company OH&S procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Legislative requirements and procedures may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

RANGE STATEMENT**Information** may include:

- vehicle/manufacturer specifications
- product manufacturer specifications
- company operating procedures
- industry/workplace codes of practise
- customer requirements
- Statutory legislation
- State/industry OHS legislation.

Unit Sector(s)

Unit sector	Technical - Manufacture

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTM3007 Assemble and install pneumatic system kit

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to assemble, install and test a pneumatic system kit. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text

of competency.	is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan the job	1.1. Work specification is read and interpreted to determine installation process 1.2. Components required are determined 1.3. Tools and equipment are determined
2. Assemble and install pneumatic system kit	2.1. Assembly and installation activities are carried out according to legislative requirements, OHS requirements and organisation requirements 2.2. Assembly and installation information is accessed and interpreted from appropriate sources of information 2.3. Pneumatic system kit is assembled in accordance with manufacturers specifications 2.4. Installation procedures are carried out in accordance with manufacturer specifications and tolerances
3. Test pneumatic systems	3.1. Test information is accessed and interpreted from manufacturer specifications 3.2. System tests before and/or after installation are carried out in accordance with manufacturer specifications and tolerances

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed work
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and

REQUIRED SKILLS AND KNOWLEDGE

- instructions, particularly regarding the safe assembly and installation of pneumatic system kits
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans
- quality system documentation covering instructions, procedures, performance indicators and review processes
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- OHS procedures
- equipment/component safety requirements
- interpretation of technical materials, graphic symbols and diagrams
- identification of pneumatic components
- pneumatic system operation
- installation procedures
- measuring and testing procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work

EVIDENCE GUIDE

	• applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • assemble pneumatic system/components • install pneumatic system/components • test pneumatic system • use relevant tools and equipment • select and use appropriate materials for the installation of pneumatic systems • employ organisation OHS procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Legislative requirements</i> and procedures may include:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and organisation agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
<i>Sources of information</i> may	• customer requirements

RANGE STATEMENT

include:

- industry/organisation codes of practice
- manufacturer specifications
- organisational operating procedures
- OHS legislation.

Unit Sector(s)**Unit sector**

Technical - Manufacture

Competency field**Competency field**

Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTM3008 Bond and repair components using fibreglass reinforced plastic techniques

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to bond or repair components using reinforced plastic techniques for the Truck/Bus/Trailer Manufacture and Assembly industry. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan the job	1.1. Work is carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Items to be bonded/repared are determined from work orders 1.3. Appropriate <i>materials and equipment</i> for the processes are selected
2. Bond/repair components	2.1. Edges and surfaces are prepared in accordance with organisation procedures 2.2. Bonding agents are mixed ready for application 2.3. Lay up application process is completed in accordance with work orders 2.4. Surface is prepared for final finish in accordance with organisation procedures 2.5. Equipment is cleaned and stored and organisation documentation completed

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed work
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas

REQUIRED SKILLS AND KNOWLEDGE

- access, interpret and apply information on relevant organisation policies, procedures and instructions particularly to ensure bonding agents are correctly mixed
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- measuring procedures
- material safety requirements
- types of composite materials and their applications
- repair/bonding procedures
- organisation finishing processes

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work

EVIDENCE GUIDE

	• applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • prepare the surface for the job • mix and apply the materials according to specifications • bond / repair components to job requirement • finish the surface to job requirement • apply organisation OHS policy and procedures
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Materials and equipment may include:

- fibreglass materials and mixes
- hand tools, measuring equipment, power tools, specialist tools for fibreglass work.

Unit Sector(s)

Unit sector

Technical - Manufacture

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTN3001 Rectify and replace vehicle body panels and ancillary fittings

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to remove and replace new or repaired body panels, body sections, and ancillary fittings. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Remove body panels and ancillary fittings (including protector mouldings and decals)	1.1. Removal activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Job information is accessed and interpreted from appropriate manufacturer specifications 1.3. Work is completed without causing damage to any organisation property or vehicle 1.4. Where there is a potential disturbance to electrical, mechanical, electronic or other systems, assistance is sought from <i>appropriate personnel</i> , if required
2. Replace/refit body panels and ancillary fittings	2.1. Replacement information is accessed and interpreted from appropriate manufacturer specifications 2.2. Replacement components and ancillary fittings meet specifications for dimensions, <i>materials</i> and functional capability. 2.3. Components and ancillary fittings are refitted using approved methods, materials and equipment 2.4. Sealant is selected and applied according to the product manufacturer specification for type, method of application and thickness 2.5. Where there is a potential disturbance to electrical, mechanical, electronic or other systems, appropriate assistance is sought, if required 2.6. Replacement activities including bolt on, weld on and bond on procedures are completed within established industry guidelines
3. Rectify faulty or damaged panels	3.1. Panels/sections are inspected to identify appropriate methods and procedures to be used in the rectification process 3.2. Damaged/faulty panels/sections are rectified in accordance with organisation procedures and quality standards

ELEMENT	PERFORMANCE CRITERIA
	3.3.Organisation documentation is completed

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of any disturbances to systems caused by the removal of body panels or ancillary fittings
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure the minimisation of disturbances to electrical, mechanical and electronic systems
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- equipment/material safety requirements
- use of relevant tools and equipment
- manual handling techniques
- sealant selection and applications
- removal and replacement procedures for body panels and sections
- removal and replacement procedures for ancillary fittings
- rectification techniques

REQUIRED SKILLS AND KNOWLEDGE

- measuring techniques - use of tapes, squares
- welding, mechanical fastening, riveting and metal cutting techniques
- adhesive bonding applications and procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
 - modify activities to cater for variations in organisation context and environment
 - interpret and communicate operational information
 - employ safe working practices
 - remove panels and ancillary fittings
 - replace panels and ancillary fittings
 - rectify damaged panels and sections
 - identify appropriate components
 - apply manual handling techniques
 - use relevant tools and equipment
 - apply appropriate sealants

EVIDENCE GUIDE	
	complete organisation documentation - written / electronic.
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

RANGE STATEMENT

Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.
Materials may include:	• sealing and adhesive materials • dollies, flippers, dreadnought files, pry bars, air sanders.

Unit Sector(s)

Unit sector	Technical - Body

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTP3001 Finish surfaces for painting

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to finish and prepare surfaces for painting. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare surface for painting	1.1. Hand/air tools are selected to meet the job requirements 1.2. Surfaces are cleaned and degreased 1.3. <i>Final finishing</i> is performed on parts and surfaces to <i>organisation requirements</i> 1.4. Reject parts and surfaces are identified, recorded and reported for rework or scrap according to organisation policy
2. Prime paint surfaces	2.1. The correct paint is selected/mixed 2.2. Paint is applied to the specified organisation standard 2.3. Finished surface is to the specified organisation quality 2.4. Reject paintwork is identified, recorded and reworked or scrapped in accordance with organisation policy 2.5. <i>Appropriate personnel</i> are notified at the completion of task

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to notify appropriate personnel of completed tasks
- apply teamwork to a range of situations, including the final finishing of parts and surfaces
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure finished paint work meets specified organisation quality
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- organisation cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- types of finishing tools and equipment and their application
- paint types, characteristics and application techniques
- organisation production schedules
- organisation quality standards

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals

EVIDENCE GUIDE	
	• responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in workplace context and environment • use finishing tools and equipment to prepare surfaces • produce parts with final finish to company standards • limit the number of faulty parts to less than quality standards • produce work flow records - written / electronic • apply company OH&S policy and procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present

RANGE STATEMENT

with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Final finishing may include:

- grinding
- metal finishing
- panel flagging and hemming
- hand filing
- sanding
- polishing.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Appropriate personnel may include:

- clients and managers
- supervisors
- suppliers
- team leaders
- team members.

Unit Sector(s)

Unit sector	Technical - Paint

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTP3002 Rework paint faults

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to identify and rework paint faults. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text

of competency.	is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify paint film faults	1.1. Paint film faults are identified to ensure the correct repair methods are applied in the rework processes 1.2. The cause/s of the paint film faults are identified in order to ensure fault is rectified and / or removed during the rework process
2. Select, use and maintain appropriate tools and equipment	2.1. Tools, equipment and materials are selected and inspected to meet job requirements 2.2. Tools and equipment that are faulty are reported, tagged and stored in designated areas for repair 2.3. Tools and equipment are cleaned at the end of each paint rework to prevent blemishes to surfaces on the next paint rework 2.4. Tools, equipment and materials are used in accordance with organisation and OHS requirements
3. Prepare faulty paint surfaces for rectification	3.1. Masking papers and tapes are applied to the surrounding panels to protect painted surfaces from damage and overspray 3.2. Faulty paint surfaces are scuffed back to the required pre-paint standard 3.3. Scuffed panels are wiped and cleaned to the required pre-paint standard 3.4. Scuffed panels are inspected to ensure the paint fault has been totally removed
4. Apply putties, primer surfaces and colour coatings	4.1. Putties and primer surfaces are prepared to the consistency recommended in the suppliers instructions guide 4.2. Putties and primer surfaces are applied to the specifications stated in the standard operating procedures 4.3. Colour coatings are matched in accordance with the paint number shown on the vehicle identification plate 4.4. Colour coatings are mixed to the viscosity recommended in the supplier instruction guide 4.5. Colour coatings are applied and blended into the existing paint work

5. Finish repainted area and complete paperwork	5.1. Painted surfaces are baked to the required hardness 5.2. Repainted surfaces are polished to the required lustre 5.3. Surrounding areas are cleaned to ensure they show no excess materials or overspray 5.4. Rework job sheets are completed and attached to the vehicle

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform personnel of stages of work completion
- apply teamwork to a range of situations, including the application and blending of colour coatings
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure the safe and correct use of tools, equipment and materials
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- reading and interpreting materials lists and operating procedures
- types of paints, sealants, solvents, putties, primer surfaces and their properties
- types of film faults and known faults identified by paint manufactures
- techniques for mixing, preparing and applying paints and other chemicals

REQUIRED SKILLS AND KNOWLEDGE

- company/manufacturer policies and procedures
- the use, application and maintenance of the range of tools, materials and equipment relevant to these processes
- producing work flow records - written / electronic
- company OH&S policy and procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- employ appropriate reworking techniques for identified faults
- prepare and use solvents to eliminate rust, remove greases, and remove protective waxes
- interpret and communicate operational information
- select appropriate sealants, adhesives, paints, tools and equipment
- employ mechanical and manual sanding techniques

EVIDENCE GUIDE	
	• mix, prepare and apply paints, primers, lacquers, enamels, and two pack paints • employ safe working practices • maintain company records - paper based / electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>Materials</i> may include:	• putties, primer surfaces, colour coatings, phosphate dips, primer coatings, colour coatings, anti-chip materials, etch primers, lacquers, enamels, two pack and anti chip paints, sealers, solvents, masking tapes and papers, and abrasive papers, spirit wipes, de-mineralised water.

RANGE STATEMENT

Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
OHS requirements may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Unit Sector(s)

Unit sector	Technical - Paint

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTR3001 Install or replace electrical and electronic units and assemblies

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to install or replace units/assemblies as required in the Truck/Bus/Trailer Manufacture and Assembly industry. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Install and test electrical/electronic units/assemblies	1.1. Installation and testing activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Installation requirements are determined 1.3. Appropriate <i>tools, equipment</i>, fittings and materials are selected for the installation and testing processes 1.4. Electrical units/assemblies are installed according to job requirements and manufacturer specifications
2. Remove and replace electrical/electronic units/assemblies	2.1. Removal information is accessed and interpreted from appropriate manufacturer specifications to determine procedures 2.2. Electrical units/assemblies are removed and replaced using approved methods, tools and equipment

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed work
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to assure that appropriate fittings are selected for different installations

REQUIRED SKILLS AND KNOWLEDGE

- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- use of relevant tools and equipment
- installation or replacement procedures for electrical/electronic units/assemblies
- testing equipment and application procedures for electrical/electronic units/assemblies
- electrical circuit principles
- cable termination techniques

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:

EVIDENCE GUIDE	
	• achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • employ safe working practices • install or replace electrical/electronic units/assemblies as per job sheet • test installation.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present

RANGE STATEMENT

with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Tools and equipment may include:

- hand tools, jacking, support and lifting equipment, power tools and air tools
- electrical test equipment - voltmeter, ampmeter, multimeter, resistance meter

Unit Sector(s)

Unit sector

Technical - Electrical and Electronic

Competency field

Competency field

Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTR3002 Manufacture or modify wiring harnesses

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to manufacture or modify wiring harnesses including checking, replacement and labelling of the wiring harness. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Check/test wiring harness and determine required action	1.1. Job assessment is carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Wiring harness and job specification is checked to determine required action 1.3. Materials and equipment for the manufacture / modification are identified and accessed
2. Manufacture wiring harness	2.1. Electrical circuit wiring diagrams are accessed and interpreted from appropriate manufacturer specifications 2.2. Harness is manufactured to job specifications using appropriate tools, techniques and <i>materials</i> 2.3. Harness is tested prior to placing in service and results are recorded
3. Modify wiring harness	3.1. Job information is accessed and interpreted from appropriate manufacturer specifications 3.2. Wiring harness is labelled and removed using appropriate tools and techniques 3.3. Associated components are labelled and removed and tagged for storage 3.4. Modified harness is correctly fitted to vehicle and reconnected according to manufacturer specifications and/or labels

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed wiring and modification work

REQUIRED SKILLS AND KNOWLEDGE

- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure the correct testing of harnesses is carried out
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- interpreting wiring diagrams and graphic symbols
- cable types/sizes, current carrying capacity and their application
- circuit testing procedures (voltage drop and circuit performance)
- repair and manufacture procedures
- electrical termination types, applications and procedures
- harness taping techniques
- fault finding using aural, visual and functional assessments for damage, corrosion, wear and electrical defects

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for

Evidence of the following is essential:

EVIDENCE GUIDE

assessment and evidence required to demonstrate competency in this unit	• compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • check/test wiring harnesses • manufacture or modify wiring harnesses • removal and replacement of wiring harnesses • test wiring harnesses and locate faults • terminate electrical connections • select and use appropriate materials for manufacture/modify of wiring harnesses • complete organisation documentation - written / electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process

EVIDENCE GUIDE

	assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Materials may include:

- tagging/labelling materials
- cable of various types and sizes
- electrical tape

RANGE STATEMENT

	• terminals • fitting equipment • terminating equipment • chassis assembly

Unit Sector(s)

Unit sector	Technical - Electrical and Electronic

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTR3003 Perform minor modifications and repairs to electrical circuits and systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to test electrical circuits/systems and carry out modifications and minor repairs. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Test systems/components and identify faults	1.1. Testing is carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Relevant information is accessed and interpreted from appropriate manufacturer specification 1.3. Tests are carried out to determine faults using appropriate tools and techniques 1.4. Faults are identified and preferred rectification procedures are determined 1.5. Testing is completed without causing damage to engine management systems or other electrical/electronic devices
2. Modify wiring/lighting of electrical systems	2.1. Modification is achieved without causing damage to any component or system 2.2. Electrical wiring/lighting systems are modified using appropriate tools and equipment
3. Complete minor modifications/repairs to electrical circuit wiring and components	3.1. Relevant information is accessed and interpreted from appropriate manufacturer specifications 3.2. Necessary repairs, component replacement and adjustments are carried out using appropriate <i>tools, materials</i> and techniques

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of completed modifications/repairs

REQUIRED SKILLS AND KNOWLEDGE

- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure appropriate tools and techniques are used to perform repairs, replacements and adjustments
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- electrical principles and circuit wiring characteristics
- circuit repair procedures
- electrical measuring and testing procedures
- vehicle safety requirements
- procedures to avoid damage to ECUs
- fault finding using aural, visual and functional assessments for damage, corrosion, wear and electrical defects

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for

Evidence of the following is essential:

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assessment and evidence required to demonstrate competency in this unit

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in organisation context and environment
- complete minor modifications/repairs to circuit wiring and components
- test and identify faults in electrical circuits and systems
- employ safe working practices
- employ vehicle electronic systems and components protection procedures
- complete organisation documentation - written / electronic

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

- A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:
- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
 - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
 - assessment may be applied under project related conditions (real or simulated) and require evidence of process
 - assessment must confirm a reasonable inference that

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	competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
<i>Tools and materials</i> may include:	• hand tools, test lamps, multimeters • power/air tools, special tools for removal/replacement, special testing equipment • soldering equipment and cable terminations • electrical components, wiring, clips, globes, fuses, tapes.

Unit Sector(s)

Unit sector	Technical - Electrical and Electronic

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTS3001 Prepare materials for fabrication using jigs and fixtures

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to interpret the drawings/specifications/materials list, selecting, marking out and loading materials for fabrication using jigs/fixtures. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select and mark out materials	1.1. Drawings/specifications/materials lists are read and interpreted 1.2. Correct materials for job are selected 1.3. Appropriate transport equipment is operated according to organisation procedures 1.4. Defective materials are set aside for scrap, return or rework 1.5. Job is marked out according to relevant drawing and appropriate final finish is considered
2. Load/unload material onto jig/fixture	2.1. Appropriate lifting gear is selected and used 2.2. Material/parts are securely fixed to prevent movement and inaccurate specifications 2.3. Materials/parts are loaded and unloaded in accordance with OHS requirements
3. Bend/shape material for fabrication	3.1. Appropriate tools and resources are selected and used 3.2. Bend/shape processes are employed according to manufacturer and organisation procedures 3.3. Bent/shaped material is checked against job specification 3.4. Bending/shaping processes are completed in accordance with organisation OHS procedures
4. Record workflow and production schedules	4.1. Workflow and production schedules are recorded using the appropriate paper work 4.2. Workflow and production schedules are completed and maintained to ensure production targets are achieved 4.3. Deviations to work flow and production schedules are recorded and reported to the appropriate personnel

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to report deviations in work flow to appropriate personnel
- apply teamwork to a range of situations, including the loading and unloading of materials
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure workflow and production schedules are completed accurately
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and

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	practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in workplace context and environment • interpret drawings/specifications/materials lists • identify materials • mark out materials • fixing of materials in jig / fixtures for fabrication • produce work flow records - written / electronic • apply organisation OHS policy and procedures • maintain an effective, clean and safe work site • apply manual handling techniques.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other

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	circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisation procedures may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Final finish may include:

- seams
- blemishes.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Resources may include:

- materials - aluminum, mild steel, bissaloy, stainless steel, preformed parts
- securing processes - bolts, clamps, metal pins
- transport equipment - use of cranes, hoists, tow motors and

RANGE STATEMENT

	- trolleys - jigs/fixtures - company documents to be completed - paper based / electronic - production drawings / specifications / materials lists - qualified workplace assessor - workplace or simulated workplace.
<i>Appropriate personnel</i> may include:	- clients and managers - supervisors - suppliers - team leaders - team members.

Unit Sector(s)

Unit sector	Technical - Fabrication

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTS3002 Prepare materials for fabrication using manual processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge in the Bus/Truck/Trailer Manufacture and Assembly sectors required to interpret the drawings/specifications/materials list and prepare the materials for fabrication using manual processes. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select and mark out materials	1.1. Drawings/specifications/materials lists are read and interpreted 1.2. Correct materials for job are selected 1.3. Appropriate transport equipment operated according to company procedures 1.4. Defective materials are set aside for scrap, return or rework 1.5. Job is marked out according to relevant drawing and appropriate final finish is considered (seams and blemishes)
2. Bend/shape material for fabrication	2.1. Appropriate tools are selected in accordance with job requirements 2.2. Distortion prevention measures are identified and applied in accordance with job requirements 2.3. Bend/shape processes are employed according to manufacturer and company procedures 2.4. Bent/shaped material is checked against job specification 2.5. Bending/shaping processes are completed in accordance with company OHS procedures
3. Record workflow and production schedules	3.1. Workflow and production schedules are recorded using the appropriate paper work 3.2. Workflow and production schedules are completed and maintained to ensure production targets are achieved 3.3. Deviations to work flow and production schedules are recorded and reported to the appropriate personnel for action

Required Skills and Knowledge

Required knowledge

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques.
- materials lists codes
- marking out and fabrication preparation techniques - straight line, template, geometric.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques

EVIDENCE GUIDE	
	• modify activities to cater for variations in workplace context and environment • interpret drawings/specifications/materials lists • identify materials • mark out materials • prepare materials for fabrication • employ distortion control techniques • check for squareness and alignment to work order specifications • produce work flow records - written / electronic • apply enterprise OHS policy and procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility

RANGE STATEMENT	
of the item, and local industry and regional contexts.	
Legislative requirements and procedures may include:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and enterprise agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
OHS requirements may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Job context may include:	• Work areas including: • body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture

RANGE STATEMENT

	Processes including: welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Appropriate personnel may include:	- clients and managers - supervisors - suppliers - team leaders - team members.
Work quality goals may include:	those established within a quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.
Changed work requirements may include:	- interruptions to parts supply/quality - line speed - personnel absences and the needing to fill production line gaps.
Cost reduction initiatives may include:	- continuous improvement programs - cost benchmarks - power conservation - productivity achievement - waste avoidance.
Sources of information may include:	- customer requirements - industry/workplace codes of practice - manufacturer specifications - organisational operating procedures - OHS legislation.
Resources may include:	- materials - aluminum, mild steel, bissaloy, stainless steel, preformed parts - securing processes - bolts, clamps, metal pins - transport equipment - use of cranes, hoists, tow motors and trolleys - jigs/fixtures - company documents to be completed - paper based / electronic - production drawings / specifications / materials lists - qualified workplace assessor - workplace or simulated workplace.

Unit Sector(s)

Unit sector	Technical - Fabrication

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTS3003 Fabricate plugs

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to produce a plug for the fabrication of a mould to produce fibreglass components. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan fabrication of the plug	1.1. Profile is established and plug dimensions determined 1.2. Appropriate materials and equipment for plug fabrication are selected 1.3. <i>OHS</i> and <i>organisation requirements</i> are followed 1.4. Personal protective equipment is selected and used
2. Shape the plug	2.1. Shape and attachment locations are determined and measured 2.2. Templates and patterns for shapes within the plug are fabricated 2.3. Surface and shape of the plug is prepared 2.4. Plug fit is tested against job requirement 2.5. Plug is prepared in accordance with company policies and procedures and manufacturer' requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- apply teamwork to a range of situations, including the preparation of the plug
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure OHS requirements are adhered to
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- organisation cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- plug construction processes
- operating procedures for equipment
- characteristics of materials used for plug and applications
- company finishing processes
- quality standards
- organisation work flow records - paper based / electronic
- organisation OHS policy and procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals

EVIDENCE GUIDE

	• achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in workplace context and environment • Produce formed plug to meet the job specification and production schedule • Select and use appropriate materials • Produce work flow records • Apply company OH&S policy and procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the

RANGE STATEMENT

Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Unit Sector(s)

Unit sector

Technical - Fabrication

Competency field

Competency field

Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTS3004 Fabricate parts for sub-assemblies

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to produce, finish and test parts/components for sub-assemblies or specific customer orders. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select and operate welding equipment	1.1. Materials list is correctly read and interpreted 1.2. Appropriate welding equipment is selected to weld the required components 1.3. Welding equipment is inspected, tested and adjusted to ensure that it meets the specifications set for the required welds 1.4. Workflow and production schedules are maintained throughout and recorded as per organisation requirements
2. Weld components to form sub-assemblies	2.1. Components are welded at the predetermined points as specified in the relevant drawings 2.2. Welds are completed to the quality standards and specifications stated in the standard operating procedures 2.3. Welded parts are pry tested to ensure welds meet the quality and specifications stated in the standard operating procedures 2.4. Any faults are identified and rectified in accordance with organisation quality procedures
3. Assemble components to form sub-assemblies	3.1. Nuts, bolts, clips, screws and rivets are selected and tensioned to the specification stated in the standard operating procedures 3.2. Seals/sealing strips, spacers, adhesives and sealants are used to ensure assembled components are securely joined and free of leaks 3.3. Sub-assemblies are inspected for quality and against specification 3.4. Faulty/defect sub-assemblies are scrapped or reworked in line with organisation procedures
4. Complete final finish and testing of sub-assemblies	4.1. Final finishing of the sub-assemblies is performed to the required standard and specification 4.2. Final finished sub-assemblies are rechecked for quality

ELEMENT	PERFORMANCE CRITERIA
	against specification 4.3.Final finished sub-assemblies that are faulty/defected are scrapped or reworked in line with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform appropriate personnel of work completed
- apply teamwork to a range of situations, including the assembling of components
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure faulty/defective sub-assemblies are scrapped or reworked where appropriate
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- organisation cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- welding principles and techniques (spot pedestal and portable; MIG; braze; seam; robotic; oxy-acetylene)
- types of welds - fillet; lap; edge; butt
- procedures for the safe and efficient use of welding equipment
- component assembly processes and production schedules

REQUIRED SKILLS AND KNOWLEDGE

- identification and application of seals and fasteners
- organisation finishing processes
- procedures for the safe and efficient use of testing equipment
- quality standards
- manual handling processes.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- use welding equipment safely and efficiently to produce components / parts
- produce formed component/parts to meet the production schedule
- select and use appropriate seals and fasteners
- complete final finishing processes
- use testing equipment

EVIDENCE GUIDE	
	• produce work flow records • identify and mark faulty parts • limit the number of faulty parts to less than quality standards • apply company OH&S policy and procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures

RANGE STATEMENT

	• equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Quality Standards may include:	• penetration, fillet size, no undercut on edges, weld width and height, distortion control.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.
Materials may include:	• spanners; screw drivers; measuring equipment; impact guns; air blowers; sockets; torque wrenches; hammers; dollies; flippers; portable sanders/grinders; hand files; pedestal grinders.
Testing may be performed using:	• micrometers; templates; tapes; dial gauges; electronic equipment; hydraulic stretchers; presses; rams.

Unit Sector(s)

Unit sector	Technical - Fabrication

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTT2001 Apply trim to components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the skills and knowledge required to measure, cut, and attach material to components. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the	Performance criteria describe the required performance needed to

essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to attach material	1.1. Work to be completed is identified in accordance with job specification 1.2. All matching, measuring and cutting procedures are carried out and completed in accordance with manufacturer and organisation specifications 1.3. All work is carried out according to industry regulations/guidelines, OHS legislation, legislative and organisation requirements 1.4. Characteristics of materials to be attached are identified 1.5. Attaching/bonding information is accessed and interpreted from appropriate sources
2. Attach material cover to component	2.1. Material is prepared for attachment 2.2. Material is attached to component

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to access appropriate information from a variety of sources
- apply teamwork to a range of situations, particularly in a safety context
- solve problems particularly in teams paying particular to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- trim matching, measuring and cutting procedures
- application and removal methods
- measuring/testing and adjustment procedures
- relevant technical and legal requirements
- equipment safety requirements
- relevant manufacturer/company policies
- types and use of various materials
- gluing, riveting, cutting, forming, stapling procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work

EVIDENCE GUIDE

	• applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in workplace context and environment • cut covers/trim to specification • select appropriate bonding process • attach trim to component • employ safe working practices • apply component protection procedures.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Legislative requirements</i> and procedures may include:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and enterprise agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.

RANGE STATEMENT

Sources of information may include:

- component manufacturer specifications
- product manufacturer specifications
- organisation operating procedures
- industry/workplace codes of practise
- customer requirements
- Statutory legislation requirements(including ADRs)
- State/industry OHS legislation
- award provisions.

Unit Sector(s)

Unit sector	Technical - Trimming and Upholstery

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTW3001 Conduct basic welding, thermal cutting, heating and gouging operations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to conduct basic welding, thermal cutting, heating and gouging operations. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine job requirements	1.1. Job specifications and requirements are interpreted and determined from job sheets and / or work instructions 1.2. Appropriate OHS practices are identified and adhered to in accordance with <i>OHS, legislative and organisation requirements</i> 1.3. <i>Information</i> is accessed from appropriate sources to enable welding to be performed in accordance with vehicle and equipment manufacturer procedures 1.4. Approved methods and equipment are accessed and used, according to type of material and repairs required
2. Plan and prepare to undertake the work	2.1. Plant/equipment/<i>resources</i> required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications 2.2. Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan 2.3. Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications 2.4. Work is planned in detail including sequencing and prioritising and considerations made in accordance with system/site requirements 2.5. Work area is prepared in accordance with work requirements and site procedures 2.6. Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures 2.7. Work completion details are finalised in accordance with site/enterprise procedures
3. Conduct work	3.1. Work is completed without causing damage to any workplace property or vehicle, system or component

ELEMENT	PERFORMANCE CRITERIA
	3.2. Oxy acetylene welding and spot welding are carried out according to standards 3.3. Gas metal arc (MIG) and arc welding are carried out according to standards 3.4. Heating is carried out according to standards 3.5. Thermal cutting and gouging are carried out according to standards

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to report potential hazards to appropriate personnel
- apply teamwork to a range of situations, including the drafting of work plans
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure oxy acetylene welding is carried out according to standards
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques.
- OHS regulations/requirements
- equipment safety requirement

REQUIRED SKILLS AND KNOWLEDGE

- personal safety requirement (eg. toxic fumes/lead poisoning)
- types of metals relevant to the applications
- types of fluxes, rods and their application
- manual metal arc welding procedures
- MIG procedures
- oxy acetylene and resistance welding procedures
- heating procedures - oxy acetylene and oxy LPG
- thermal cutting and gouging processes.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- interpret and communicate operational information
- employ safe working practices
- conduct MIG and arc welding processes
- conduct Oxy acetylene and resistance welding processes

EVIDENCE GUIDE	
	- conduct heating and thermal cutting and gouging processes - manual straight line cutting standards - use relevant tools and equipment.
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and

RANGE STATEMENT	
	substances and manual handling procedures including lifting and carrying.
Legislative requirements may include:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and enterprise agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Information may include:	• vehicle/manufacture specifications • company operating procedures • product manufacturer specifications • customer requirements • industry/workplace codes of practice • statutory legislation • material safety data sheets • State/industry OH&S legislation
Resources may include:	• hand tools, welding equipment including: manual metal arc, gas metal arc (MIG), oxy acetylene and spot • heating equipment including: oxy acetylene and oxy LPG

RANGE STATEMENT	
	- thermal cutting equipment including: oxy acetylene and/or plasma arc - substrates to include aluminium, bissaloy, steel - job sheets, drawings, work instructions - qualified workplace assessor - workplace or simulated workplace.
Standards may include:	- industry regulations/guidelines - OHS legislation - statutory legislation - organisation policy/procedures.

Unit Sector(s)

Unit sector	Technical - Welding, Grinding, Machining and Soldering

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTW3002 Conduct mechanical cutting operations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to prepare and operate equipment/plant for mechanical cutting operations. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine job requirements	1.1. Job specifications and requirements are interpreted and determined from job sheets and / or work instructions 1.2. Appropriate plant/equipment is selected in accordance with job requirements 1.3. Appropriate OHS practices are identified and followed in accordance with <i>OHS, legislative and organisation requirements</i>
2. Select and set up cutting machine	2.1. Appropriate machine for the job requirements is selected in accordance with organisation procedures 2.2. Machine is inspected for safety and operational condition in accordance with organisation procedures 2.3. Machine is set up and adjusted ready for operation 2.4. Safety clothing and protective equipment are used according to OHS and organisation requirements
3. Operate mechanical cutting equipment	3.1. Cutting processes are planned to ensure most economical use of material is achieved 3.2. Stops and guards are adjusted as required and material secured and positioned prior to machine start-up 3.3. Machine started following organisation procedures and material cut to meet shape/size/length specifications within appropriate cutting allowances 3.4. Machine maintenance procedures are completed in accordance with organisation procedures 3.5. Cutting defects are identified and corrective actions are undertaken in accordance with organisation procedures
4. Check material for conformance to specification	4.1. In process adjustments carried out as necessary 4.2. Material is cut or holed within accepted tolerances according to the job specification

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate cutting defects to appropriate personnel if necessary
- apply teamwork to a range of situations, including the operation of cutting equipment
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure OHS requirements are adhered to
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques.
- procedures to maintain a safe work environment
- set up and operation of cutting equipment
- cutting techniques - saw, shears, punch, notch
- materials characteristics and behaviour when heated and cut
- safety hazards
- marking out techniques - squaring, straight line, geomet.

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- predetermined standards of quality and safety are observed
- manual straight line cutting standards are achieved
- manual or automatic heating and cutting processes meet specifications.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its

EVIDENCE GUIDE

	correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Legislative requirements</i> may include:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and enterprise agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures

RANGE STATEMENT

	• equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.

Unit Sector(s)

Unit sector	Technical - Welding, Grinding, Machining and Soldering

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTW3003 Perform manual metal arc welding operations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application the required skills and knowledge to prepare and perform manual metal arc welding operations (MMAW). No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine job requirements	1.1. Job specifications and requirements are interpreted and determined from job sheets and / or work instructions 1.2. Appropriate OHS practices are identified in accordance with <i>OHS, legislative</i> and <i>organisation requirements</i>
2. Plan and prepare to undertake the work	2.1. <i>Resources</i> required to satisfy the work plan are identified, obtained and inspected for compliance with the <i>job specifications</i> 2.2. Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan 2.3. Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications 2.4. Work is planned in detail including sequencing and prioritising and considerations 2.5. Work area is prepared in accordance with work requirements and site procedures 2.6. Potential hazards are identified and prevention and/or control measures are selected 2.7. Safety clothing and protective equipment are used according to OHS and organisation requirements
3. Weld materials/job	3.1. Distortion prevention measures are identified and applied in accordance with job requirements 3.2. Equipment start-up procedures follow organisation standard operating procedures 3.3. Test runs are undertaken in accordance with the work plan and job requirements 3.4. Materials are welded using MMAW process to Australian Standards or equivalent, in accordance with the work plan and specifications 3.5. Welds are cleaned using appropriate tools and techniques in

ELEMENT	PERFORMANCE CRITERIA
	accordance with the work plan
4. Check completed work for conformation to specification	4.1. Weld specifications are confirmed by non-destructive testing and inspection, in accordance with standard work practices 4.2. Defects are identified and repaired using appropriate techniques and in accordance with the work plan 4.3. Work is completed and appropriate personnel notified in accordance with organisation requirements 4.4. Work area is cleared of waste, cleaned, restored and secured in accordance with organisation procedures 4.5. Plant, tools and equipment are maintained and stored in accordance with organisation procedures 4.6. Work completion details are finalised in accordance with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to notify appropriate personnel of work completed
- apply teamwork to a range of situations, including the undertaking of test runs
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure plant, tool and equipment are maintained and stored appropriately
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent

REQUIRED SKILLS AND KNOWLEDGE

- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- procedures to maintain a safe work environment
- read and interpret welding symbols on drawings
- set up and operation of welding equipment
- job planning requirements
- welding and material preparation techniques
- identification and rectification of weld defects
- distortion control techniques
- materials characteristics and behaviour when welded
- non destructive testing techniques and applications
- safety hazards and risk control methods.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques

EVIDENCE GUIDE

	• modify activities to cater for variations in workplace context and environment • predetermined standards of quality and safety are observed • welding equipment was set up and used to achieve the task in accordance with standard operating procedures • distortion control techniques where used • welding standards were achieved and within specification • relevant OHS hazards identification and risk control measures were undertaken.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present

RANGE STATEMENT

with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Legislative requirements may include:

Applicable legislation, regulations and codes of practice, including those related to:

- anti-discrimination
- award and enterprise agreements
- confidentiality and privacy
- duty of care
- employee relations
- environment protection
- equal opportunity
- industrial relations
- relevant industry codes of practice.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Job specifications may include:

- the job specifications is work area and process related
- work areas may include body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly,

RANGE STATEMENT

	warehousing, engine assembly, seat frame manufacture process may include welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Resources may include:	- stainless steel, bissaloy, cast iron, high, mild and low carbon steel, high and low alloy steels in appropriate profiles ie: angle, plate, pipe, channel - welding equipment includes arc welder, leads, electrodes, and welding shield - distortion prevention measures may include bracing, pre-setting, tacking, bolting, and clamping, jigs and fixtures - non-destructive testing may include visual inspection, dye check, magnetic particle, pressure test, and ultra sound - OHS standards (as per organisation and legislative requirements) - documentation and reporting systems (as per company requirements)- paper based / electronic - qualified workplace assessor - workplace or simulated workplace.

Unit Sector(s)

Unit sector	Technical - Welding, Grinding, Machining and Soldering

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTW3004 Perform gas tungsten arc welding operations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to perform gas tungsten arc welding (GTAW) operations within the truck, bus and trailer manufacturing industry. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine job requirements	1.1. Job specifications and requirements are interpreted and determined from job sheets and / or work instructions 1.2. Appropriate OHS practices are identified in accordance with <i>OHS, legislative</i> and <i>organisation requirements</i>
2. Plan and prepare to undertake the work	2.1. <i>Resources</i> required to satisfy the work plan are identified, obtained and inspected for compliance with the <i>job context</i> 2.2. Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan 2.3. Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications 2.4. Work is planned in detail including sequencing and prioritising considerations 2.5. Work area is prepared in accordance with work requirements and site procedures 2.6. Potential hazards are identified and prevention and/or control measures are selected 2.7. Safety clothing and protective equipment are used according to OHS and organisation requirements
3. Weld materials/job	3.1. Materials for welding are prepared and aligned in accordance with the work plan and specifications 3.2. Distortion prevention measures are identified and applied in accordance with job requirements 3.3. Equipment start-up procedures follow organisation standard operating procedures 3.4. Test runs are undertaken in accordance with the work plan and job requirements 3.5. Materials are welded using GTAW process to Australian Standards or equivalent, in accordance with the work plan and specifications

ELEMENT	PERFORMANCE CRITERIA
	3.6. Welds are cleaned using appropriate tools and techniques in accordance with the work plan
4. Check completed work for conformation to specification	4.1. Weld specifications are confirmed by non-destructive testing and inspection, in accordance with standard work practices 4.2. Defects are identified and repaired using appropriate techniques and in accordance with the work plan 4.3. Work is completed and appropriate personnel notified in accordance with organisation requirements 4.4. Work area is cleared of waste, cleaned, restored and secured in accordance with organisation procedures 4.5. Plant, tools and equipment are maintained and stored in accordance with organisation procedures 4.6. Work completion details are finalised in accordance with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform appropriate personnel of work completed
- apply teamwork to a range of situations, including the undertaking of test runs
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure plant, tools and equipment are maintained and stored appropriately
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- organisation technical work documentation covering procedures, specifications, schedules and

REQUIRED SKILLS AND KNOWLEDGE

- work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques.
- welding and heating techniques
- organisation OHS policies and procedures
- welding and material preparation techniques
- distortion control techniques
- weld testing techniques (non destructive)
- welding equipment maintenance procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context

EVIDENCE GUIDE

	and environment • prepare and plan work • complete gas tungsten arc weld • complete work procedures • employ company OHS policies and procedures • maintain welding and heating equipment • control distortion of materials • inspect and identify defects in welds • inspect and finalise job.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility

RANGE STATEMENT	
of the item, and local industry and regional contexts.	
<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Legislative requirements</i> may include:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and enterprise agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
<i>Resources</i> may include:	• welding equipment may include TIG welder, leads, argon, tungsten tips and filler rods • materials may include aluminum, stainless steel, cast iron, high, mild and low carbon steels, high and low alloy steels in the appropriate profile eg plate, pipe, tube and round bar • distortion prevention measures may include bracing,

RANGE STATEMENT

	pre-setting, tacking, bolting and clamping • appropriate tools may include wire brush and angle grinder • non-destructive testing may include visual inspection, dye check, magnetic particle, pressure tests and ultra sound • maintenance may refer to replacing tips and gas nozzles and cleaning tips, nozzles and welders • work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects • OH&S standards (as per company and statutory requirements) • documentation and reporting systems (as per company requirements)- written / electronic • work specifications / work plan • qualified workplace assessor • workplace or simulated workplace.
Job context may include:	• Work areas including: • body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture Processes including: • welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.

Unit Sector(s)

Unit sector	Technical - Welding, Grinding, Machining and Soldering

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTW3005 Perform gas metal arc welding operations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to perform gas metal arc welding (GMAW) operations within the truck, bus and trailer manufacturing industry. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine job requirements	1.1. Job specifications and requirements are interpreted and determined from job sheets and / or work instructions 1.2. Appropriate OH&S practices are identified in accordance with <i>OHS, legislative</i> and <i>organisation requirements</i>
2. Plan and prepare to undertake the work	2.1. <i>Resources</i> required to satisfy the work plan are identified, obtained and inspected for compliance with the <i>job specifications</i> 2.2. Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan 2.3. Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications 2.4. Work is planned in detail including sequencing and prioritising considerations 2.5. Work area is prepared in accordance with work requirements and organisation procedures 2.6. Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures 2.7. Safety clothing and protective equipment are used according to OHS and organisation requirements
3. Weld materials/job	3.1. Materials for welding are prepared and aligned in accordance with the work plan and specifications 3.2. Distortion prevention measures are identified and applied in accordance with job requirements 3.3. Equipment start-up procedures follow company standard operating procedures 3.4. Test runs are undertaken in accordance with the work plan and job requirements 3.5. Materials are welded using GMAW process to Australian

ELEMENT	PERFORMANCE CRITERIA
	Standards or equivalent, in accordance with the work plan and specifications 3.6. Welds are cleaned using appropriate tools and techniques in accordance with the work plan
4. Check completed work for conformation to specification	4.1. Weld specifications are confirmed by non-destructive testing and inspection, in accordance with standard work practices 4.2. Defects are identified and repaired using appropriate techniques and in accordance with the work plan 4.3. Work is completed and appropriate personnel notified in accordance with company requirements 4.4. Work area is cleared of waste, cleaned, restored and secured in accordance with organisation procedures 4.5. Plant, tools and equipment are maintained and stored in accordance with organisation procedures 4.6. Work completion details are finalised in accordance with organisation procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform appropriate personnel of work completed
- apply teamwork to a range of situations, including the undertaking of test runs
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure plant, tools and equipment are maintained and stored appropriately
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of

REQUIRED SKILLS AND KNOWLEDGE

- operation
- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- organisation cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- welding and heating techniques
- organisation OHS policies and procedures
- welding and material preparation techniques
- distortion control techniques
- weld testing techniques (non destructive)
- welding equipment maintenance procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives

EVIDENCE GUIDE	
	- effectively applying problem solving techniques - modify activities to cater for variations in workplace context and environment - prepare and plan work - complete gas metal arc weld - complete work procedures - employ organisation OHS policies and procedures - maintain welding and heating equipment - control distortion of materials - inspect and identify defects in welds - inspect and finalise job.
Context of and specific resources for assessment	- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process - assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the

RANGE STATEMENT

Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Legislative requirements</i> may include:	Applicable legislation, regulations and codes of practice, including those related to: • anti-discrimination • award and enterprise agreements • confidentiality and privacy • duty of care • employee relations • environment protection • equal opportunity • industrial relations • relevant industry codes of practice.
<i>Organisation requirements</i> may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
<i>Resources</i> may include:	• welding equipment may include MIG welder, leads, argon shield, welding wire and welding shield • materials may include stainless steel, aluminum, high, mild and low carbon steels, high and low alloy steels in the appropriate

RANGE STATEMENT

	profile eg plate, pipe, rolled steel sections • distortion prevention measures may include bracing, pre-setting, tacking, bolting and clamping, jigs and fixtures • appropriate tools may include wire brush and angle grinder • non-destructive testing may include visual inspection, dye check, magnetic particle, pressure tests and ultra sound • maintenance may refer to replacing tips and gas nozzles and cleaning tips, nozzles and welders • work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects • OH&S standards (as per company and statutory requirements) • documentation and reporting systems (as per company requirements)- written / electronic • work specifications / work plan • qualified workplace assessor • workplace or simulated workplace.
Job context may include:	• Work areas including: • body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture Processes including: • welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.

Unit Sector(s)

Unit sector	Technical - Welding, Grinding, Machining and Soldering

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTW3006 Machine parts

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to use a range of equipment to machine parts. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text

of competency.	is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare machines for operation	1.1. Work to be carried out is clarified and legislative and OHS requirements identified 1.2. Resources list is correctly read and interpreted 1.3. Appropriate hand/air tools are selected 1.4. Machine controls and cutting tools/wheels are preset or adjusted to job specification 1.5. Tools and machines are maintained in accordance with organisation policy 1.6. Measuring equipment is calibrated to ensure accurate measurement within the tolerances specified 1.7. Machine speed and feed controls are adjusted to the type of metal/alloy being machined
2. Machine parts	2.1. Parts are machined to specification using the appropriate machining process 2.2. Parts are machined and checked for tolerances specified in the standard operating procedures and to minimise waste 2.3. Identified faults and defects are rectified in accordance with work quality goals 2.4. Machined parts are washed, inspected and dried to ensure they are cleaned and contain no waste in cavities or chambers 2.5. Production schedule is maintained and recorded in accordance with organisation procedures 2.6. Appropriate personnel are notified of the completion of tasks

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

REQUIRED SKILLS AND KNOWLEDGE

Required skills

- speak clearly and directly in order to notify appropriate personnel of completed tasks
- apply teamwork to a range of situations, including the calibration of measuring equipment
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure tools and machines are maintained to required standards
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- organisation technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- organisation quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- organisation cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- procedures for the safe and efficient set up and use of machining equipment
- read and interpret work orders
- organisation procedures for dealing with faulty parts
- organisation quality standards
- manual handling processes.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards,

EVIDENCE GUIDE

required to demonstrate competency in this unit	codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in workplace context and environment • set up and use of machining equipment • machine parts to company standards • produce machined components / parts to meet the production schedule • limit the number of faulty parts to less than quality standards • produce work flow records • identify and mark faulty parts • employ company OH&S policy and procedures • apply manual handling techniques.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions

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	(real or simulated) and require evidence of process assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Legislative requirements</i> may include:	Applicable legislation, regulations and codes of practice, including those related to: - anti-discrimination - award and enterprise agreements - confidentiality and privacy - duty of care - employee relations - environment protection - equal opportunity - industrial relations - relevant industry codes of practice.
<i>OHS requirements</i> may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
<i>Resources</i> may include:	- machines used include drills, lathes, millers, reamers, honers, threading, grinders, broaching, CNC robot controlled - micrometers, vernier gauges, calipers, feeler gauges.
<i>Calibration:</i>	refers to the tolerance accuracy of measurement. This is the degree of accuracy that the measuring equipment can achieve and when it was last checked against a recognised standard of

RANGE STATEMENT

	accuracy. Users may maintain an internal standard of measure against which they periodically check the measuring equipment.
Work quality goals may include:	those established within a quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.

Unit Sector(s)

Unit sector	Technical - Welding, Grinding, Machining and Soldering

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTY3001 Paint chassis or panels

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the skills and knowledge required to prepare and apply paint to produce quality finished painted body shell/structure/panels. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for painting	1.1. <i>Paints and materials</i> are handled and used in accordance with <i>organisation</i> and <i>OHS requirements</i> 1.2. Workflow and production schedule are recorded and maintained 1.3. Panels are masked off to ensure surrounding areas are protected from overspray 1.4. Spraying <i>equipment</i> is selected and inspected to meet the requirements of the coating and colour being applied 1.5. Spraying equipment found to be faulty is tagged and stored in the designated storage area and reported to the <i>appropriate personnel</i>
2. Operate spraying equipment	2.1. Paint is prepared using codes and numbers stated in the standard operating procedures 2.2. Spraying equipment is operated and adjusted to give the required spray pattern, fan width and consistent flow of paint
3. Apply primer to surfaces and colour to panel/chassis	3.1. Paint coatings are applied to ensure interior openings and external surfaces are coated 3.2. Paint coatings are applied to the required thickness, lustre and surface finish 3.3. Paint coatings are monitored for <i>surface blemishes</i> 3.4. Viscosity of paint coatings is monitored and adjusted to ensure they compliance with paint suppliers recommended ratios 3.5. Masking materials are removed and disposed of appropriately
4. Record and report faulty paint film surfaces	4.1. Paint surfaces are visually inspected for film faults and marked for reworking 4.2. Panels with paint film faults are redirected and stored in the designated storage area for reworking and appropriate

ELEMENT	PERFORMANCE CRITERIA
	personnel notified
5. Maintain and clean equipment	5.1. Spraying equipment is maintained in accordance with the suppliers recommended maintenance schedules and procedures 5.2. Equipment maintenance schedules are checked and delays in maintenance reported to the appropriate personnel for attention

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to report faulty equipment appropriately
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to paint requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation
- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- surface preparation procedures
- reading and interpreting materials lists and operating procedures

REQUIRED SKILLS AND KNOWLEDGE

- types of paints, sealants, solvents, related chemicals and their properties
- procedures for mixing, preparing and applying paints and other chemicals
- company/manufacturer policies and procedures
- the use, application and maintenance of the range of tools, materials and equipment relevant to these processes
- producing work flow records - written / electronic
- company OH&S policy and procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements
 - contributing effectively to cost reduction initiatives
 - effectively applying problem solving techniques
- modify activities to cater for variations in workplace context and environment
- prepare surface for painting
- prepare and use solvents to kill rust, remove greases, and remove protective waxes
- mix, prepare and apply paints, e.g. primers and/or lacquers and/or enamels and/or two pack paints

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	• interpret and communicate operational information • select appropriate sealants, adhesives, paints, tools and equipment • employ mechanical and manual sanding techniques • employ safe working practices • select and use relevant tools and equipment • maintain company records - paper based / electronic.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Paints and materials</i> may	• phosphate dips, primer coatings, colour coatings, anti-chip

RANGE STATEMENT	
include:	materials, etch primers, lacquers, enamels, two pack and anti chip paints, sealers, solvents, masking tapes and papers, and abrasive papers, spirit wipes, de-mineralised water
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
OHS requirements may include:	Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.
Equipment may include:	• high pressure guns, squeeze bottles, airless spraying equipment, air recirculating systems, paint recirculating systems, automatic / robotic spraying systems, extension nozzles, paint brushes and knives, air disc and hand sanding equipment, air oscillating sanding machines and tape dispensers
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.
Surface blemishes may include:	• excess orange peel and runs

Unit Sector(s)

Unit sector	Technical - Chassis and Frame

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTY3002 Mount and install assembled component to chassis or frame

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the competence required to mount and install an assembled component and associated services onto a chassis or frame (eg cab/sleeper or vehicle body). No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select and use tools and equipment	1.1. Tools and equipment are selected to meet job requirements 1.2. Tools and equipment are regularly checked to ensure they are in good working order 1.3. Daily maintenance on tools and equipment is performed as specified 1.4. Appropriate lifting gear is selected and used in accordance with OH&S requirements
2. Select and use nuts, bolts, screws, washers and fasteners	2.1. Nuts, bolts, screws, washers and fasteners are identified and selected to meet the job requirements as stated in the materials list 2.2. Nuts, bolts, screws, washers and fasteners are fitted in the required number to the designated positions stated in the materials list and associated drawings 2.3. Size and position of holes drilled complies with drawing specifications
3. Install components and sub-assemblies	3.1. Materials list and drawings are correctly read and interpreted 3.2. Parts/components are matched with the materials list for the job specification 3.3. Parts/components are positioned and secured as per the relevant drawings/instructions 3.4. Specified nuts, bolts and screws are tensioned to the specification stated in the company procedures 3.5. Sub-assemblies are inspected and checked for quality and specification and installed in accordance with company procedures 3.6. Workflow and production schedule are recorded and maintained
4. Mount assembly on the chassis or frame	4.1. Materials list and drawing correctly read and interpreted Assembly is positioned and secured as per the

ELEMENT	PERFORMANCE CRITERIA
	manufacturer's requirements 4.2. Specified nuts, bolts and screws are tensioned to the specification stated and in accordance with job requirements and company procedures 4.3. Mounted assembly inspected and checked for alignment quality against specification 4.4. Workflow and production schedule are recorded and maintained
5. Hook-up systems	5.1. Drawings correctly read and interpreted to comply with work order 5.2. Service lines are hooked up to components as per drawing/specification 5.3. Completed hook-up is checked and inspected for quality and specification 5.4. Workflow and production schedule are recorded and maintained

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly
- apply teamwork to a range of situations, particularly in a safety context
- solve problems particularly in teams paying particular attention to safety issues and adjust performance indicators to reflect changed circumstances
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and enterprise policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment. The specific regulations will vary according to the area of operation

REQUIRED SKILLS AND KNOWLEDGE

- enterprise technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- enterprise quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- enterprise cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- reading and interpreting materials lists and operating procedures
- types and purpose of body component shapes and assemblies used within the industry
- the use and application of conveyor systems and transporting equipment (cranes, forklifts) and other tools, materials and equipment relevant to these processes
- service lines and components and their purpose within the assembly
- company/mManufacturer policies and standard operational assembly and installation procedures
- work flow records - written / electronic
- company OH&S procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and enterprise policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - achieving production goals
 - achieving work quality goals
 - responding positively to changing work requirements

EVIDENCE GUIDE	
	• contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in workplace context and environment • mount and install assembly, components and service lines to specification • read and interpret materials lists, drawings and production schedules • interpret and communicate operational information • select appropriate parts/components, tools and equipment • employ of safe working practices • maintain company records - paper based / electronic.
Context of and specific resources for assessment	Assessment must ensure: • underpinning skill, knowledge and attitudes for each unit of competency in each work area, and for specific job roles within work areas, will differ between enterprises, and will alter from time to time depending on factors such as changes in equipment, technology and culture • before skill, knowledge and attitudes development and assessment of the trainee begins, key operators in the area, in conjunction with trainers, union representatives and other stakeholders, must list the underpinning knowledge, skill and attitudes required to perform the unit competently (to standard). This will be used as a guide for training and assessment • The application of competency is to be assessed in the workplace or realistically simulated workplace • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints • assessment is to comply with relevant regulatory or Australian Standards requirements • assessment of the underpinning knowledge should be combined with assessment of the skill • assessment of the underpinning knowledge may take place on- or off-the-job • assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

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	- assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge - assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application - assessment may be applied under project related conditions (real or simulated) and require evidence of process - assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

<i>Legislative requirements</i> and procedures may include:	applicable legislation from all levels of government that affect organisational operations. Requirements may include but not be limited to award and enterprise agreements, industrial relations, employee relations, Australian Standards, confidentiality and privacy, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice and duty of care.
<i>OH&S requirements</i> may include:	Commonwealth, State or Territory legislation and regulations, organisational safety policies and procedures. Requirements may include but not be limited to the use of personal protective equipment and clothing, rescue services, fire fighting organization and equipment, first aid equipment, hazard and risk control and elimination, systems covering of hazardous materials and substances and manual handling including lifting and carrying.
<i>Enterprise requirements</i> may include:	- legal - organisational and site guidelines - policies and procedures relating to own role and responsibility - quality assurance

RANGE STATEMENT	
	- procedural manuals - quality and continuous improvement processes and standards - OH&S - emergency and evacuation - ethical standards - recording and reporting - access and equity principles and practices - equipment use - maintenance and storage - environmental management (waste disposal, recycling and re-use guidelines).
Job context may include:	- the job context is work area and process related - work areas may include body construction, aluminium die casting, iron foundry operations, engine machining, spray painting, automotive plastics, stamping & press operations, fabrication hardware, trim manufacture, vehicle assembly, warehousing, engine assembly, seat frame manufacture - process may include welding sub-assemblies, fitting hang-on components, fittings dies to die boxes, pouring aluminium, machining parts, application of paint, cutting blanks, assembly of components to form sub-assemblies, fitting parts to bodies, assembly of parts, parts picking and replenishment.
Appropriate personnel may include:	- supervisors - team members - team leaders - suppliers - clients and managers.
Work quality goals may include:	those established within each enterprise quality system and may include identification, minimisation and elimination of defects, product/component specifications, tolerances, inspection systems, packaging specifications and non-conforming parts or products.
Changed work requirements may include:	- result from variations in process change - line speed - interruptions to parts supply/quality - personnel absences.
Cost reduction initiatives may include:	- cost benchmarks - waste avoidance - power conservation - productivity achievement - continuous improvement levels.

RANGE STATEMENT

Sources of information may include:	• vehicle manufacturer specifications • product manufacturer specifications • company operating and assembly procedures • industry/workplace codes of practise • customer requirements • State/Territory/Federal statutory requirements(including ADRs) • State/industry OH&S legislation.
Resources may include:	• hand tools, power tools, vehicle protection equipment, lifting equipment, scaffolds, impact guns • components and sub-assemblies (eg cab/sleeper, truck/trailer body) • chassis manufacturer's guidelines • equipment used may include conveyor equipment, tow motors, forklifts, mechanised pallet trucks and driverless tractors, robotic equipment • jigs may include the use of quick release grips, screw grips and automatic grips • parts may include raw materials, component parts, consumables, located in warehouse racks and aisles and will also include adhesives, sealants, gels and tapes • service lines include: electrical wiring, pneumatic systems and hydraulic systems • work orders / job sheets • qualified workplace assessor • workplace or simulated workplace.

Unit Sector(s)

Unit sector	Technical - Chassis and Frame

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AUMGTY3003 Modify or rectify chassis and frame and associated components

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to modify or rectify and align chassis/frame and/or components applicable to vehicles with separate frame construction. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Inspect to determine modification/ rectification required	1.1. Inspection activities are carried out according to <i>OHS</i> and <i>organisation requirements</i> 1.2. Chassis / frame is measured and inspected to establish modification requirements 1.3. Written inspection report prepared during inspection
2. Replace or rectify components	2.1. Correct information is accessed and interpreted from appropriate manufacturer specifications 2.2. Replacement or rectification of components is achieved using appropriate <i>tools and equipment</i> without causing damage to any workplace property or vehicle section, system or component 2.3. Rectification and replacements of chassis/frame components are carried out in accordance with vehicle manufacturer specifications and tolerances relative to the vehicle 2.4. Work done is recorded and dealt with according to organisation policies and procedures
3. Align and modify chassis/frame	3.1. Information relating to modification processes is accessed and interpreted from appropriate manufacturer specifications 3.2. Alignment / modification procedures for the chassis are carried out in accordance with manufacturer specifications and tolerances 3.3. Work done is recorded and dealt with according to organisation policies and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to inform team members of work completed
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure accurate alignments are made using appropriate alignment equipment
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- alignment procedures
- inspection and measuring procedures
- repair/replacement of components procedures
- vehicle safety requirements
- relevant manufacturer/organisation policies
- use of lifting and transportation equipment
- manual handling techniques
- visual, aural and functional assessments (including damage, wear and breakage)
- wheel and chassis alignment geometry
- cutting and welding procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • Compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • Maintaining a working knowledge of current work systems and practices • Working and communicating effectively and positively with others involved in the work • Applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • Modify activities to cater for variations in organisation context and environment
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

OHS requirements may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Tools and equipment may include:

- hand tools, power tools, special tools for removal/alignment
- measuring equipment, pressing equipment, heating equipment, welding equipment (ARC, OXY, MIG, TIG), chassis aligning equipment - measuring, clamping, bracing, jigs.

Unit Sector(s)

Unit sector

Technical - Chassis and Frame

Competency field

Competency field	Manufacturing - Bus, Truck and Trailer

Co-requisite units

Not applicable.

AURC172003A Identify environmental regulations and best practice in a workplace or business

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the competence to identify environmental regulations and avoid potential hazards in an automotive workplace

Application of the Unit

Application of the unit	Work involves the theory and knowledge related to environmental issues in the automotive industry

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify environment regulations	1.1.Reasons for ethical environmental practice in an automotive workshop are identified 1.2.Responsibilities of staff in an automotive workshop are identified 1.3.Penalties for individual breaches of legislation are identified 1.4.Methods to minimise waste and sort store for recycling or disposal are identified 1.5.Methods to sort and dispose of packaging on goods received are identified
2. Identify hazards to stormwater	2.1.Actions to be taken to ensure no waste water is allowed to enter stormwater system are identified 2.2.Storage methods for parts and components containing environmentally hazardous materials are identified 2.3.Recycling and storage procedures for liquid wastes are identified 2.4.Uses of a spill kit are identified 2.5.Procedures to keep workplace clean and prevent unintentional stormwater pollution are identified
3. Identify hazards to air quality	3.1.Hazards of airborne particles are identified, and methods to minimise and contain are identified 3.2.Hazards of gases and fumes are identified, and methods to minimise and contain are identified
4. Identify noise	4.1.Effects of noise creating activities and methods to

ELEMENT	PERFORMANCE CRITERIA
hazards	minimise these are identified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand information related to environmental procedures from legislation, regulations and workshop practices in a workplace or business
- communicate ideas and information to enable all work is undertaken in accordance with environmental best practice, coordination of work with site supervisor, other workers and customers, and reporting of work outcomes and problems
- plan and organise activities, including preparation of equipment and material and selection of worksite to avoid environmental contamination, backtracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to minimise wastage, optimise workflow and productivity
- use mathematical ideas and techniques to correctly complete measurements and estimate material requirements
- use planning, checking and inspection techniques to avoid environmental contamination and wastage
- use workplace technology related to environmental protection equipment

Required knowledge

- aspects of environmental legislation and its implications for work being undertaken in an automotive business
- characteristics and potential environmental impact of products used in the automotive industry
- philosophy of prevention, reuse, reduce, recycle
- procedures for use of spill kit
- effects of noise pollution and methods to minimise it

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Demonstrate knowledge of environmental regulations and best practice as they would apply in an automotive workplace or business. • Identify material used in an automotive business and assess their environmental impact.
Context of and specific resources for assessment	• Assessment may occur on the job or in an institutional setting. • Access to environmental legislation, regulations and best practice models.
Method of assessment	• Assessment should be by questioning on underpinning knowledge. • Assessment could be conducted over time and may be in conjunction with assessment of other units of competency.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Unit context	• OHS requirements, material safety data sheets (MSDS), hazardous substances and dangerous goods code and safe operating procedures • Competence is demonstrated in accordance with legislative obligations, environmental

RANGE STATEMENT	
	legislation, health regulations, manual handling procedures and organisation insurance requirements • Competence requires individuals to demonstrate discretion, judgement and problem-solving skills in undertaking environmentally sound work practices • Competence may be demonstrated in appropriate setting and does not require practical demonstration
Tooling and equipment	No specific tooling and equipment are required
Material	Materials may include: • MSDS
Personal protective equipment	No specific personal protective equipment is required

Unit Sector(s)

Unit sector	Common

Co-requisite units

Co-requisite units	

Competency field

Competency field	

AURC251677A Use numbers in the workplace

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the competence to collect, calculate and/or estimate numerical information and to prepare various numerical reports to ensure efficiency in the organisation.

Application of the Unit

Application of the unit	

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Collect and organise numerical information	1.1.Procedures for collecting and organising numerical information are established 1.2.Numerical information is collected 1.3.Numerical information provided from other sources is monitored, checked for accuracy and corrected 1.4.Numerical information from different sources is compared
2. Interpret and present numerical and related information	2.1.Procedures are established for the interpretation of numerical information 2.2.Numerical information is identified, interpreted and manipulated 2.3.Numerical information is checked for accuracy 2.4.Numerical and related information is presented 2.5.Evidence for interpretation of results is presented
3. Apply numerical and related information	3.1.Quantities/resources required in the workplace are estimated 3.2.The time required to complete the task is estimated 3.3.Settings for equipment and machinery are estimated and adjusted

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand information related to collating figures, calculation and analysis
- communicate ideas and information to use calculations in reports, emails and memos
- plan and organise activities using numbers/calculations in plans/budgets
- work with others and in a team by presentations involving team members
- numerical skills in the selection and application of mathematical processes, including at a minimum; addition, subtraction, multiplication and division
- establish diagnostic processes which use numbers/calculations/ estimations when preparing budgets
- technical skills in the use of calculators or computers

Required knowledge

- basic knowledge of legislation and statutory requirements, including OHS
- basic knowledge of enterprise policies and procedures in relation to the collection, storage and application of numerical information
- basic mathematical concepts
- calculations including addition, multiplication, subtraction, division and percentages
- calculations involving whole numbers and fractions

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Context of and specific resources for assessment

- This unit may be assessed in conjunction with other units that form part of the job role or function
- Elements of competence contain both knowledge and

EVIDENCE GUIDE	
	practical components. Knowledge components may be assessed off the job. Practical components should be assessed on the job or in a simulated work environment • Evidence is best gathered using the products, processes and procedures of the individual workplace context as the means by which the candidate achieves industry competencies • The following should be made available: • a workplace or simulated workplace • documentation, such as enterprise or sample documents, invoices, statements, stock records, job cards, repair quotations, personnel records, time sheets and supply quotations • equipment for calculations, such as calculators or computers • a qualified workplace assessor
Method of assessment	It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover the varying circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons, subject to agreed authentication arrangements.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Business types	Enterprise may vary in size, type and location, in the range of work activities conducted, hours of

RANGE STATEMENT	
	operation and in the number and type of staff
Applications	Applications may include, but not limited to: the involvement in the preparation of budgets, calculations involving invoices or order forms, sales calculations, calculation of costs, enterprise financial duties, calculation or estimation of quantities, materials, equipment settings or time requirements, wages and leave entitlement
Legislative requirements	Legislative requirements include: state/territory legislation related to OHS and award provisions
Policies and procedures	Enterprise policies and procedures are followed regarding privacy and confidentiality
Information/documents	Information/documents may include: - manufacturer/component supplier specifications, enterprise operating procedures, customer requirements and industry/workplace codes of practice - numerical information may also be sourced from enterprise-specific documents, invoices, statements, stock records, job cards, repair quotations, personal records, time sheets, computer records, equipment or material supply quotations and supplier invoices or statements

Unit Sector(s)

Unit sector	Common

Co-requisite units

Co-requisite units	

Co-requisite units		

Competency field

Competency field	

AURC270789A Communicate effectively in the workplace

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the competence to communicate in the workplace by oral, written and electronic means.

Application of the Unit

Application of the unit	

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Write routine texts	1.1. Routine texts of one or more sentences are composed in accordance with workplace requirements 1.2. Routine forms are completed in accordance with workplace requirements 1.3. Spelling, punctuation and grammar rules are followed 1.4. Texts are self-checked for accuracy and presented for progress checks by relevant persons
2. Read routine documents	2.1. Purpose of the text is understood and described 2.2. Main points or ideas presented are described 2.3. New technical words are comprehended 2.4. The meaning of key words and phrases are explained
3. Contribute to workplace communications	3.1. Information is accessed to ensure effective communication when sending or receiving information 3.2. Assistance is provided to colleagues in the workplace to foster common understanding 3.3. Requests for information from colleagues are met 3.4. Documents are kept and maintained in accordance with workplace/enterprise procedures and government legislation
4. Apply basic computer skills	4.1. Computer is turned on according to manufacturer/ component supplier specifications or workplace procedures 4.2. Software is loaded or selected from menu 4.3. File is identified and selected or new file is produced

ELEMENT	PERFORMANCE CRITERIA
	4.4. Information is entered, edited or deleted using an input device and within workplace designated speed and accuracy requirements 4.5. Document is saved regularly to avoid loss of information 4.6. Document is proof read and amended for accuracy 4.7. Document is produced in required style and format 4.8. Document is printed 4.9. File is saved and closed and program closed or exited according to manufacturer/component supplier specifications or workplace procedures 4.10. Computer is turned off according to manufacturer/ component supplier specifications or workplace procedures 4.11. OHS guidelines relating to screen-based equipment and computer workstations are observed
5. Operate workplace telephone systems	5.1. Telephone system functions are used according to enterprise policy 5.2. Outgoing calls are completed in accordance with manufacturer instructions and enterprise policy and procedures 5.3. Incoming calls are answered promptly and in accordance with enterprise policy and procedures 5.4. Calls are transferred or placed on hold 5.5. Caller is kept informed of delays and action being taken 5.6. Caller details and purpose of call are obtained and documented 5.7. Messages are documented and calls promptly returned if required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand information related to input/ transfer information

REQUIRED SKILLS AND KNOWLEDGE

into a computer and interpreting workplace information

- communicate ideas and information utilising plain English literacy and communication skills in relation to writing, reading and understanding workplace documents including basic oral communication skills in relation to conveying and receiving workplace information
- plan and organise activities to take or leave a telephone message
- work with others and in a team by distributing information to team members
- use mathematical ideas and techniques to ensure version control of files and documents is followed
- establish diagnostic processes to recognise and clarify information
- use workplace technology related to basic computer keyboard skills in relation to opening, editing, closing and printing basic text documents, and basic technical skills in the operation of computer hardware and telephone equipment

Required knowledge

General knowledge of:

- enterprise forms, documents and stationery
- enterprise policies and procedures in regard to:
 - workplace document style, format and layout
 - workplace communication procedures
 - workplace documents
 - telephone protocols and operating procedures
 - computer system operating procedures
- legislation or regulations in relation to OHS, particularly for use of screen-based equipment and ergonomic computer workstations

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the

EVIDENCE GUIDE	
	critical aspects of: • writing short routine texts using correct spelling, punctuation and grammar • reading, interpreting and applying routine texts in the workplace • interpreting and conveying workplace information • maintaining workplace communications, including documents • applying keyboard skills to prepare and/or edit simple documents using a computer • applying enterprise requirements for document style and format • applying enterprise requirements for electronic storage and retrieval of documents • applying enterprise procedures for incoming and outgoing telephone calls.
Context of and specific resources for assessment	• This unit may be assessed in conjunction with other units that form part of the job role or function. • Elements of competence contain both knowledge and practical components. Knowledge components may be assessed off the job. Practical components should be assessed on the job or in a simulated work environment. • Evidence is best gathered using the products, processes and procedures of the workplace as the means by which the candidate achieves industry competencies. • The following should be made available: • a workplace or simulated workplace • documentation, such as enterprise or sample policies and procedures manuals related to workplace document style, format and layout, workplace communication procedures, workplace documents, telephone protocols and operating procedures, computer system operating procedures • enterprise or sample stationery, documents and forms • access to enterprise or similar computer hardware and software • access to enterprise or similar telephone system.
Method of assessment	It is preferable that assessment reflects a process rather

EVIDENCE GUIDE

	than an event and occurs over a period of time to cover the varying circumstances. Evidence of performance may be provided by customers, team leaders/members or other appropriate persons, subject to agreed authentication arrangements.
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Business types

Enterprise may vary in size, type and location, the range of work activities conducted, hours of operation and the number and type of staff

Staff

Staff may:

- be full-time, part-time or casual and vary in terms of training and staffing levels
- be operating in routine or busy trading and may include persons from a range of social, cultural or ethnic backgrounds and physical and mental abilities
- work in teams or groups of varying size and structure

Communication

Communication may include:

- face to face, telephone, written or electronic means

Legislative requirements

Legislative requirements may include:

- legislation, regulations or industry codes of practice in relation to OHS, particularly for use of screen-based equipment and ergonomic

RANGE STATEMENT	
	computer workstations
Policies and procedures	Enterprise policies and procedures may relate to: workplace forms and documents, computer operating procedures, telephone use and system operating procedures

Unit Sector(s)

Unit sector	Common

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURC272003A Apply environmental regulations and best practice in a workplace or business

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the competence to identify and apply environmental regulations and avoid potential hazards in a workplace or business.

Application of the Unit

Application of the unit	This unit applies to automotive business, excluding body repair, marine and mechanical involving the removal of components containing oils or other fluids.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and apply environment regulations	1.1.Reasons for ethical environmental practice in a workplace or business are identified 1.2.Environmental responsibilities of staff in a workplace or business are identified 1.3.Penalties for individual breaches of legislation are identified 1.4.Waste is minimised, waste materials, including solids, sludge and biological materials are sorted and stored in bins for recycling or disposal 1.5.Packaging on goods received is sorted and disposed of
2. Identify and avoid hazards to stormwater	2.1.No wastewater or contaminants are allowed to enter stormwater system 2.2.Parts and components containing environmentally hazardous materials are stored undercover in a sealed and bunded or drained treatment area 2.3.Liquid wastes are drained into storage or recycling containers 2.4.Spill kit is located and used as needed to prevent stormwater contamination 2.5.Spills are cleaned immediately and workplace is kept clean to prevent unintentional stormwater pollution
3. Identify and avoid hazards to air quality	3.1.Hazards of airborne particles are identified, minimised and contained 3.2.Hazards gases and fumes are identified, minimised and contained

ELEMENT	PERFORMANCE CRITERIA
4. Identify and avoid noise hazards	4.1.Noise creating activities are minimised and carried out within approved operating hours

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand information related to environmental procedures from legislation, regulations, policies, guidelines and workplace practices in a workplace or business
- communicate ideas and information to enable work is undertaken in accordance with environmental best practice, coordination of work with site supervisor, other workers and customers, and reporting of work outcomes and problems
- plan and organise activities, including preparation of equipment and material and selection of worksite to avoid environmental contamination, backtracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to minimise wastage, optimise workflow and productivity
- use mathematical ideas and techniques to correctly complete measurements and estimate material requirements
- use planning, checking and inspection techniques to avoid environmental contamination and wastage
- use workplace technology related to environmental protection equipment

Required knowledge

Knowledge of:

- aspects of environmental legislation and its implications to work being undertaken
- characteristics and potential environmental impact of products used in the business
- philosophy of prevent, reuse, reduce, recycle
- procedures for reporting machinery faults and material defects
- internal reporting procedures for significant environmental damage occurring in the workplace

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Apply environmental regulations and best practice
- Identify material used in the business and assess their environmental impact
- Follow work instructions, operating procedures and inspection processes to:
 - minimise risk of injury to self and others
 - prevent damage and wastage of goods, equipment and products
 - maintain required production output, product and service quality
- Conduct operator maintenance on tooling and equipment to ensure environmental efficiency
- Work effectively with others
- Modify activities to cater for variations in workplace context and environment
- Use of a spill kit.

Context of and specific resources for assessment

- Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines.
- Access to an automotive business excluding, body repair, marine, mechanical involving removal of components containing oils or other fluids.

Method of assessment

- Assessment methods must confirm consistency of performance over time and in a range of workplace contexts.
- Assessment should be by direct observation of tasks and questioning on underpinning knowledge.
- Assessment should be conducted over time and may be in conjunction with assessment of other units of competency.

Guidance information for assessment

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Unit scope	• Work involves normal activities of an automotive business, including the occupations of glazing, accessory fitting, window tinting, trimming and bicycles • This unit is applicable to Certificate II qualifications. Other specific environmental units of competency apply to marine, paint and panel preparation and some mechanical stream qualifications involving the removal of components containing oils or other fluids
Unit context	• OHS requirements, material safety data sheets (MSDS), hazardous substances and dangerous goods code and safe operating procedures • Work is carried out in accordance with legislative obligations, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements • Work requires individuals to demonstrate discretion, judgement and problem-solving skills in undertaking environmentally sound work practices • Competence may be demonstrated in workplace or business, excluding body repair, marine, mechanical involving the removal of components containing oils or other fluids
Tooling and equipment	Tooling and equipment are to include: • spill kits and recycling containers
Materials	Materials may include: • MSDS

RANGE STATEMENT	
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices
Information/documents	Information/documents may include: • environmental legislation, regulations and advice • workplace procedures relating to the use of tooling and equipment • work instructions, including job cards/sheets • site environmental policy • workplace procedures relating to reporting and communication of environmental issues • manufacturer/component supplier specifications and operational procedures

Unit Sector(s)

Unit sector	Common

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURC472082A Plan and manage compliance with environmental regulations in a workplace or business

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the competence to plan and implement management system that ensures the protection of the environment in a workplace or business.

Application of the Unit

Application of the unit	Work involves the activities of an automotive business, including the planning and management of the occupations of glazing, accessory fitting, window tinting, trimming, and bicycles. This unit is applicable to qualifications at both the Certificate IV and V level. In recreational boating, vehicle body and some technical areas involving the removal of components containing oils or other fluids, specific environmental units of competency should be used. Work requires individuals to demonstrate discretion, judgement and problem-solving skills to improve environmental performance by reducing environmental risk and waste. Competence may be demonstrated in any automotive business excluding, body repair, marine and mechanical involving the removal of components containing oils or other fluids.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and manage compliance with environmental regulations	1.1. Reasons for ethical environmental practice in a workplace or business are identified 1.2. Environmental responsibilities of employers and employees in an automotive workplace or business are identified 1.3. Penalties for enterprise and individual breaches of the legislation are identified 1.4. Waste products are minimised and facilities provided for waste materials to be stored in bins for recycling or disposal 1.5. Collection and recycling arrangements are implemented for liquids, sludge, solids and other

ELEMENT	PERFORMANCE CRITERIA
	waste 1.6. Suppliers with minimal excess packaging on goods received are sourced and packaging on goods received is sorted and disposed of appropriately 1.7. Waste and energy conservation strategies are identified and implemented
2. Manage potential hazards to stormwater system to avoid contamination	2.1. Systems are in place to ensure wastewater does not enter the stormwater system 2.2. All drains and flows are identified on a worksite map directly indicating where they flow 2.3. Trade waste permits are in place 2.4. Undercover and bunded or drained areas are provided and used for the storage of all materials containing environmentally hazardous substances 2.5. Spill kit is provided and used to prevent stormwater contamination 2.6. Workplace is kept clean to prevent unintentional stormwater pollution
3. Manage potential hazards to air quality to avoid contamination	3.1. Hazards of airborne particles are identified, minimised and contained 3.2. Hazards of gases and fumes are identified, minimised and contained 3.3. A well-ventilated area is provided for any welding activities
4. Minimisation of noise hazards is planned and managed	4.1. Noise creating activities are minimised and carried out within approved operating hours 4.2. Fixed machinery is fitted with silencers or surrounded by noise containment material
5. Management systems	5.1. An environmental policy and contingency plan suitable to the needs of the business is developed and implemented 5.2. Waste to landfill is calculated and possible savings through reuse and recycling are calculated 5.3. Payback period on environmental equipment is calculated 5.4. Manage staff adherence to environmental responsibilities 5.5. Environmental documents are maintained and stored securely in a form accessible for reporting procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand information related to environmental procedures from legislation, regulations, policies, guidelines, standards and workplace best practices in an automotive business
- communicate ideas and information to ensure all work undertaken is in accordance with environmental best practice, support from stakeholders is actively sought for implementing suitable innovation and continuous improvement
- plan and organise activities including the preparation of equipment and materials recycling and waste management systems and the selection of worksite to avoid environmental contamination, back tracking, workflow interruptions or wastage
- promote work with others and in a team by recognising dependencies and using cooperative approaches to minimise wastage, optimise workflow and productivity
- use mathematical ideas and techniques to complete measurements and estimate material requirements required for the work and calculate wastage rates of various methods
- use planning, checking and inspection techniques to avoid environmental contamination and wastage
- use the workplace technology related to environmental protection and recycling equipment

Required knowledge

Knowledge of:

- aspects of environmental legislation and its relationship with occupational health and safety (OHS), finance and risk management
- requirements for trade waste permits
- spill clean-up procedures
- characteristics and potential environmental impact of products used in the business
- philosophy of sustainability through prevention, reuse, reduce and recycle
- procedures for rectifying machinery faults and material defects
- actions to be taken in case of environmental threat in the workplace
- reporting procedures for environmental damage occurring in the workplace
- cleaner production and eco-efficient strategies to avoid the production of waste

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Plan and manage safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Plan and manage environmental protection procedures
- Identify materials used in the business and assess and manage their environmental impact
- Plan and manage work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - maintain a clean workplace
 - prevent damage and wastage of goods, equipment and products
 - dispose of waste in accordance with legislative requirements and best practice
 - maintain production output, and product and service quality
- Report environmental damage or spills
- Plan and manage operator maintenance on equipment to ensure environmental efficiency
- Manage effective planning and teamwork related to environmental best practice
- Develop/implement or audit an existing business environmental policy which covers at a minimum: waste, recycling, hazards to stormwater, air quality, noise, energy minimisation and costs
- Modify activities to cater for variations in workplace context and environment.

Context of and specific resources for assessment

- Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines
- The following should be made available:
 - access to an automotive business which includes waste materials of various types, recycling bins, liquid, sludge and solid wastes
 - resources may include pressure washing and

EVIDENCE GUIDE	
	facilities for the use of recycled water.
Method of assessment	- Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts. - Assessment should be by direct observation of tasks and questioning on underpinning knowledge. - Assessment should be conducted over time and should be in conjunction with assessment of other units of competence. - Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a component authority. - Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Automotive business	Any automotive business excluding body repair, marine and mechanical involving the removal of components containing oils or other fluids
Work procedures	Work is carried out in accordance with: OHS legislation, material safety data sheets (MSDS), hazardous substances and dangerous

RANGE STATEMENT	
	goods code and local safe operating procedures legislative obligations, environmental legislation, health regulations, and manual handling procedures and organisation insurance requirements
Tools and equipment	Tools and equipment are to include: spill kits, recycling bins and drums
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices
Information/documents	Information/documents may include: - environmental legislation, regulations and advice - workplace procedures relating to the use of tools and equipment - work instructions and procedures - worksite environmental policy - workplace procedures relating to reporting and communication - manufacturer/component supplier specifications and operational procedures - local council and waterways regulations - MSDS, environmental documents, manufacturer/component supplier specifications, costing of equipment and waste removal - staff environmental induction material

Unit Sector(s)

Unit sector	Common

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURE224008A Carry out soldering of electrical wiring/circuits

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to carry out soldering processes appropriate to electrical components/wiring/circuits.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirement, preparation for work, soldering and testing of joints and completion of work processes, including clean-up and documentation. Work involves the application of solder in electrical/electronic wiring and circuitry applications. Work requires individuals to demonstrate some judgement and problem-solving skills in safety equipment, soldering techniques, environmental issues, repair procedures and vehicle operational requirements. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Work instructions are used to determine job requirements, including job sheets, quality and quantity of material 1.2. Job specifications are read and interpreted 1.3. OHS requirements, including personal protection needs, are observed throughout the work 1.4. Material for repairs and replacements are selected and inspected for quality 1.5. Correct hand and power tooling and safety equipment are selected and checked for safe use 1.6. Products are determined to minimise waste material 1.7. Procedures are identified for maximising energy efficiency while completing the job
2. Prepare components/wiring/circuits,	2.1. Correct information is accessed and interpreted from manufacturer/component supplier

ELEMENT	PERFORMANCE CRITERIA
tooling and equipment for soldering	specifications 2.2.Materials/components to be joined are cleaned and solder/flux combinations identified 2.3.Soldering equipment is prepared/cleaned 2.4.Preparation is completed without causing damage to vehicle or component 2.5.Preparation activities are carried out according to a standard that meets industry regulations/guidelines, OHS, legislation and enterprise procedures/policies
3. Carry out soldering of components/wiring/circuits	3.1. Correct information is accessed and interpreted from manufacturer/component supplier specifications 3.2. Soldering is completed without causing damage to vehicle or component 3.3. Soldering joint is tested prior to placing into service 3.4. Soldering activities are carried out according to a standard that meets industry regulations/guidelines, OHS, legislation and enterprise policy/procedures
4. Clean up work area and maintain equipment	4.1. Material that can be reused is collected and stored 4.2. Waste and scrap is removed following workplace procedures 4.3. Equipment and work area are cleaned and inspected for serviceable conditions in accordance with workplace procedures 4.4. Unserviceable equipment is tagged and faults identified in accordance with workplace 4.5. Operator maintenance is completed in accordance with manufacturer/component supplier specifications and site procedures 4.6. Tooling is maintained in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

- collect, organise and understand information related to soldering of electrical components/wiring, work orders, plans and safety procedures
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise activities, including preparation and layout of worksite and obtaining of equipment and material to avoid backtracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use workplace technology related to soldering of electrical wiring/circuits, including the use of soldering tooling, measuring equipment and communication devices and the reporting/documenting of results

Required knowledge

A working knowledge of:

- OHS regulations/requirement, equipment material and personal safety requirements
- fluxes and their application
- types of material, including solder, electrical terminals, wires and circuits
- preparation and soldering procedures
- guidelines regarding acceptable solder tolerance levels to be considered and manufacturer/component supplier specification
- work organisation and planning processes
- enterprise quality processes

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstance in the critical aspects of: • observing safety procedures and requirements • communicating effectively with others involved in or affected by the work • selecting methods and techniques appropriate to the circumstances • completing preparatory activity in a systematic manner • identifying, setting up, operating and maintaining heating equipment and hand tooling • achieving soldering outcome and work quality relevant to application.
Context of, and specific resources for assessment	Application of competence is to be assessed in the workplace or simulated worksite. Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints. Assessment is to comply with regulatory requirements, including Australian standards. The following resources should be made available: • workplace location or simulated workplace • material relevant to soldering of electrical wiring/circuits • equipment, hand and power tooling appropriate to soldering of electrical wiring/circuits • activities covering mandatory task requirements • specifications and work instructions.
Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of AUR05 Automotive Industry RS&R Training Package • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge • Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key

EVIDENCE GUIDE

	competencies • Assessment may be applied under project related conditions and require evidence of process • Assessment must confirm a reasonable inference that competence is able to be under the particular circumstance, and is able to be transferred to other circumstances • It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements • Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

OHS requirements

OHS requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures, and may include:

- protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances

RANGE STATEMENT	
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to: the conduct of operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include but may not be limited to: emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to: waste management, noise, dust and clean-up management
Quality Requirements	Quality requirements are to include, but are not limited to: regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include: federal, state/territory and local authorities administering acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include: hand tooling and soldering equipment, including electric and gas-fired torches
Materials	Materials may include: cleaning substances, flux and solder
Communications	Communications are to include, but are not limited to: verbal and visual instructions and fault

RANGE STATEMENT	
	reporting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to soldering of electrical wiring/circuits • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian Standards

Unit Sector(s)

Unit sector	Electrical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURM441976B Test engines using a dynamometer

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency describes the skills and knowledge required to test engines using a dynamometer. It requires the technical ability to use a dynamometer to test engine performance and to analyse and interpret test results in order to maximise engine performance in the motorsport and performance enhancement environments. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit applies to individuals who set up, conduct dynamometer tests on engines and log, analyse and report the test data in order to maximise engine performance in motorsport and performance enhancement environments.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for dynamometer operation	1.1. Use team instructions, controlling body rules, category rules and component supplier specifications to specify job requirements, including design, quality, materials, equipment and specifications 1.2. Observe occupational health and safety (OHS) requirements, including regulatory requirements, equipment and system isolation requirements, extraction, fire hazard, fuel storage, scatter shields, noise regulations, environmental regulations and personal protection needs, throughout the work 1.3. Check dynamometer for calibration and serviceability and prepare for operation 1.4. Connect engine to dynamometer, including ancillary systems and monitoring/control systems 1.5. Connect exhaust extraction and check for serviceability 1.6. Prepare engine for dynamometer testing, including checking oil and water levels, and confirm engine tune and condition
2. Conduct dynamometer testing	2.1. Identify load and run sequence, including run-in period for new engines 2.2. Calculate correction factors and apply to results 2.3. Check engine connections to the dynamometer

ELEMENT	PERFORMANCE CRITERIA
	2.4. Perform selected dynamometer testing sequence in accordance with technical specifications and directions and/or the locally authorised method 2.5. Analyse dynamometer test data and make valid conclusions about engine and sub-system condition and performance 2.6. Report findings, including recommendations for engine configuration and/or modifications to improve performance based on dynamometer data, to appropriate persons 2.7. Test approved modifications with confirmation runs 2.8. Present data to team members as information to complement engine/vehicle set-up
3. Clean up work area and log test results	3.1. Perform dynamometer shutdown procedure in accordance with manufacturer/component supplier requirements 3.2. Disconnect engine from dynamometer 3.3. Clean and refurbish dynamometer and associated tooling and equipment 3.4. Conduct operator maintenance of dynamometer 3.5. Log dynamometer test results to create/add to engine history

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- technical skills to the level required to use workplace technology related to dynamometers, including tooling, equipment, calculators and measuring devices
- communication skills to the level required to communicate ideas and information to enable confirmation of work requirements, coordination of work with technical supervisors, other technicians and team members, and to report work outcomes and problems
- literacy skills to the level required to collect, organise, understand and analyse information related to dynamometer test results, team requirements and safety

REQUIRED SKILLS AND KNOWLEDGE

procedures

- numeracy skills to the level required to use mathematical ideas and techniques to correctly complete measurement of engine performance required for the team
- problem-solving skills to the level required to use dynamometer testing to solve problems with engine performance
- team skills to the level required to work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- planning skills to the level required to plan and organise activities, including the preparation and layout of the work area, and the obtaining of equipment and material to avoid backtracking, workflow interruptions or wastage

Required knowledge

Required knowledge includes:

- engine performance and dynamometer terminology
- preparation procedure for dynamometer testing
- dynamometer operation and use of associated hardware and software
- test environment correction factors
- dynamometer data interpretation and analysis
- operator dynamometer maintenance
- procedures for reporting task completion
- metric and imperial units of measurement
- OHS policies and procedures
- applicable commonwealth, state or territory legislation, regulations, standards and codes of practice, including OHS, personal safety and environment, relevant to testing engines using a dynamometer

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this**

Assessors must be satisfied that the candidate can competently and consistently:

EVIDENCE GUIDE**unit**

- interpret and apply team requirements, controlling body and category rules and supplementary regulations
- correctly apply and use safety equipment and personal protective equipment
- follow task instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - prevent damage to competition vehicle or equipment
 - achieve required outcomes within team time and quality standards
- correctly set up and operate an engine dynamometer to test a minimum of two (2) engines to complete the following:
 - determine engine performance
 - analyse engine performance data
 - assess effect of engine and sub-system modifications and present to team members as information to complement engine/vehicle set-up
 - confirm effectiveness of engine and sub-system modifications
- work effectively with others
- modify activities to cater for variations in workplace context and environment.

Context of, and specific resources for assessment

- The application of competency is to be assessed in the workplace or a simulated environment that reflects as far as possible the actual working environment.
- Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints.
- Assessment is to comply with relevant regulatory requirements, including specified Australian standards.
- Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
- The following resources should be made available:
 - access to tooling and equipment
 - engines
 - dynamometer and test equipment
 - technical references or information.

Method of assessment

- Assessment must satisfy the endorsed Assessment

EVIDENCE GUIDE	
	Guidelines of this Training Package. • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of Required Skills and Knowledge. • Assessment methods must be by direct observation of tasks and include questioning on Required Skills and Knowledge to ensure its correct interpretation and application. • Assessment may be applied under project-related conditions (real or simulated) and require evidence of process. • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	Assessment processes and techniques must be culturally sensitive and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Dynamometers	Dynamometers may include: • engine and chassis dynamometers • water loaded dynamometers • electrically loaded dynamometers
OHS requirements	OHS requirements are to be in accordance with applicable commonwealth, state or territory

RANGE STATEMENT	
	legislation and regulations, and organisational safety policies and procedures, and may include: • personal protective equipment and clothing, including closed-in shoes, long trousers, handling gloves and other equipment • safety equipment • first aid equipment • hazard and risk control • elimination of hazardous materials and substances • manual handling, including shifting, lifting and carrying • emergency procedures • team insurance requirements • material safety management systems • controlling body requirements • manufacturer/component supplier specifications • local safe operating procedures
Legislative requirements	Legislative requirements are to be in accordance with applicable commonwealth, state or territory legislation, regulations, certification requirements and codes of practice, and may include: • award and enterprise agreements • industrial relations • Australian standards • Australian Design Rules • confidentiality and privacy • OHS • the environment • equal opportunity • anti-discrimination • duty of care • health regulations
Tooling and equipment	Tooling and equipment may include: • engine dynamometer • chassis dynamometer • hand and power tooling • engine compression test kit • vacuum/pressure gauges

RANGE STATEMENT	
	• flow meters • exhaust analysers • engine diagnostic computer hardware and software
Information and procedures	Information and procedures may include: • controlling body rules, category rules and supplementary regulations • event scheduling and location details • team procedures and standards related to: • testing engines using a dynamometer • reporting and communication • use of tooling and equipment • emergency service contacts and team persons emergency contacts • team emergency and event procedures for accidents or injury • work instructions, including worksheets, material safety data sheets (MSDS), assembly procedures, plans, drawings, designs and checklists • manufacturer/component supplier specifications and application procedures for test equipment and material • Australian Design Rules (where applicable) • safety body publications • environmental, hazardous chemicals and dangerous goods legislation and local requirements relating to the disposal and use of fuels, lubricants, coolants and cleaning agents

Unit Sector(s)

Unit sector	Motorsport

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT211170A Inspect and service air braking systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to carry out inspection and servicing of air braking systems and/or associated components.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirement, preparation for work, inspection, analysis and servicing of air braking systems and completion of work finalisation processes, including clean-up and documentation. Work involves vehicles fitted with air braking systems. Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to undertake inspection of air braking systems	1.1. Nature and scope of work requirements are identified and confirmed 1.2. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 1.3. Procedures and information such as workshop manuals and specifications, and tooling required, are sourced 1.4. Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5. Technical and/or calibration requirements for the inspection of air braking systems are sourced and support equipment is identified and prepared 1.6. Warnings in relation to working with air braking

ELEMENT	PERFORMANCE CRITERIA
	systems are observed
2. Conduct inspection and analyse results	2.1.Methods for the inspection are implemented in accordance with road safety legislation, workplace procedures and manufacturer/component supplier specifications 2.2.Inspection results are compared with manufacturer/component supplier specifications to indicate compliance or non-compliance 2.3.Results are documented with evidence and supporting information and recommendation(s) made 2.4.Report is processed in accordance with workplace procedures
3. Prepare to service air braking systems	3.1.OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 3.2.Procedures and information required are identified and sourced 3.3.Technical and tool requirements for servicing are identified and support equipment is identified and prepared
4. Carry out servicing	4.1.Methods for the servicing are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 4.2.Adjustments are made during the service
5. Prepare equipment for use or storage	5.1.Service schedule documentation is completed 5.2.Final inspection is made to ensure protective guards, safety features and cowlings are in place 5.3.Final inspection is made to ensure work is to workplace expectations 5.4.Equipment is cleaned for use or storage to workplace expectations 5.5.Job card is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures
- apply analytical skills required for identification and analysis of technical information
- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining information from customers
- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to own work activities, including making good use of time and resources, sorting out priorities and monitoring one's own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use mathematical ideas and techniques to correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to servicing tooling and equipment, inspection, analysis and servicing of air braking systems, including the use of measuring equipment, computerised technology and communication devices and the reporting/documenting of results

Required knowledge

A working knowledge of:

- OH&S and environmental regulations/requirements, equipment, material and personal safety requirements
- dangers of working with air brakes
- operating principles of air braking systems and components and their relationship to each other
- inspection procedures
- types and layout of service/repair manuals (hard copy and electronic)
- servicing procedures
- enterprise quality procedures
- work organisation and planning processes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- accurately interpreting inspection results
- conducting the service in accordance with workplace and manufacturer/component supplier requirements
- completing service of air braking systems and associated components within workplace timeframes
- equipment is presented to customer in compliance with workplace requirements

Context of, and specific resources for assessment

Application of competence is to be assessed in the workplace or simulated worksite

Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints

Assessment is to comply with regulatory requirements, including Australian Standards

The following resources should be made available:

- workplace location or simulated workplace
- material relevant to the inspection, analysis and servicing of air braking systems
- equipment, hand and power tooling appropriate to the inspection, analysis and servicing of air braking systems
- activities covering mandatory task requirements

EVIDENCE GUIDE	
	specifications and work instructions
Method of assessment	Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies Assessment may be applied under project related conditions and require evidence of process Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Components	Components to be serviced include:

RANGE STATEMENT	
	• compressors • receivers • drive belts • actuator mechanisms
OH&S	OH&S requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of

RANGE STATEMENT	
	practice
Tooling and equipment	Tooling and equipment may include hand tooling, gauges and brake testing devices
Materials	Materials may include fluids, minor parts, filters and cleaning materials
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to the inspection, analysis and servicing of air braking systems • regulatory/legislative requirements pertaining to the automotive industry, including Australian Design Rules • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian Standards

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT216130A Inspect suspension systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to carry out inspection and testing of suspension system and associated components.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirement, preparation for work, inspection, testing and assessment of suspension systems and completion of work finalisation processes, including clean-up and documentation. This unit of competence should be contextualised to the qualification to which it is being applied. Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to undertake inspection of suspension system	1.1. Nature and scope of work requirements are identified and confirmed 1.2. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 1.3. Procedures and information such as workshop manuals and specifications, and tooling required, are sourced 1.4. Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5. Technical requirements for inspection are sourced and support equipment is identified and prepared 1.6. Warnings in relation to working with wheeled or

ELEMENT	PERFORMANCE CRITERIA
	tracked equipments are observed
2. Inspect suspension system/components and assess condition	2.1. Correct information is accessed and interpreted from manufacturer/component supplier specifications 2.2. Inspections of suspension systems are carried out in accordance with manufacturer/component supplier specifications for methods, tooling and equipment 2.3. Suspension system inspection is completed without causing damage to any component or system 2.4. System/component condition is determined by comparing actual component condition to manufacturer/component supplier specifications for limits/tolerances and to State/Territory legislation regarding vehicle roadworthiness 2.5. Suspension system inspection and condition identification activities are carried out according to industry regulations/guidelines, OH&S legislation, legislation and enterprise procedures/policies
3. Prepare vehicle/equipment for delivery to customer	3.1. Inspection schedule documentation is completed 3.2. Final inspection is made to ensure work is to workplace expectations 3.3. Vehicle/equipment is presented to customer to workplace expectations 3.4. Workplace documentation is completed and dealt with relevant to inspection outcomes 3.5. Job card is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures
- apply analytical skills required for identification and analysis of technical information

REQUIRED SKILLS AND KNOWLEDGE

- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining information from customers
- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to own work activities, including making good use of time and resources, sorting out priorities and monitoring one's own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use mathematical ideas and techniques to correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to the inspection of suspension systems, including the use of measuring equipment, computerised technology, specialist tooling and testing devices communication devices, the reporting/documenting of results and diagnostic and specialised tooling and equipment

Required knowledge

A working knowledge of:

- OH&S regulations/requirements, equipment, material and personal safety requirements
- operating principles of suspension system relative to the qualification being applied
- types and layout of service/repair manuals (hard copy and electronic)
- suspension system inspection and testing procedures
- suspension system/components condition assessment procedures
- enterprise quality procedures
- work organisation and planning processes

Evidence Guide**EVIDENCE GUIDE**

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- conducting inspection, testing and assessment in accordance with workplace and manufacturer/ component supplier requirements
- completing inspection of suspension system and associated components within workplace timeframes
- vehicle/equipment is presented to customer in compliance with workplace requirements

Context of, and specific resources for assessment

Application of competence is to be assessed in the workplace or simulated worksite

Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints

Assessment is to comply with regulatory requirements, including Australian Standards

The following resources should be made available:

- workplace location or simulated workplace
- material relevant to the inspection of suspension systems
- equipment, hand and power tooling appropriate to the inspection of suspension systems
- activities covering mandatory task requirements
- specifications and work instructions

Method of assessment

Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package

Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge

EVIDENCE GUIDE

	Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies Assessment may be applied under project related conditions and require evidence of process Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Suspension systems	Suspension systems are those on light and heavy vehicles
Systems	Systems may include lateral and longitudinal arms, ball joints, self-levelling devices, ride control and height control
Inspection methods	Inspection methods are to include: functional testing/road testing, pressure

RANGE STATEMENT	
	testing, measurement visual, aural and functional assessments (including damage, corrosion, leakage, wear)
Inspection	Inspection is normally carried out prior to performing a wheel alignment
OH&S	OH&S requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities

RANGE STATEMENT	
	administering acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include hand and power tooling, lifting equipment, safety stands and supporting equipment, measuring equipment and specialist tooling and testing equipment
Materials	Materials may include cleaning materials
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to the inspection of suspension systems • regulatory/legislative requirements pertaining to the automotive industry, including Australian Design Rules • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian Standards

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT216170A Inspect and service suspension systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to carry out the service of suspension systems and associated components in an automotive retail, service and/or repair context.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirement, preparation for work, inspection, analysis and servicing of suspension systems and completion of work finalisation processes, including clean-up and documentation. This unit of competence refers to servicing suspension systems in an automotive retail, service and/or repair environment and should be contextualised to the level of the qualification to which it is being applied. Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment within the scope of this unit. This includes an understanding of the level of work to be performed. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to inspect and service suspension systems and associated components	1.1. Nature and scope of work requirements are identified and confirmed 1.2. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 1.3. Procedures and information such as workshop manuals and specifications, and tooling required, are sourced 1.4. Methods appropriate to the circumstances are selected and prepared in accordance with standard operating procedures 1.5. Resources required for servicing suspension systems

ELEMENT	PERFORMANCE CRITERIA
	are sourced and support equipment and tooling are identified and prepared 1.6. Warnings in relation to working with wheeled and/or tracked equipment are observed
2. Conduct inspection and analysis	2.1. Inspection is implemented in accordance with workplace procedures and manufacturer/component supplier specifications 2.2. Inspection results are compared with manufacturer/component supplier specifications to indicate compliance or non-compliance 2.3. Results are documented with evidence and supporting information and recommendation(s) made 2.4. Report is forwarded to persons for action in accordance with workplace procedures
3. Carry out service	3.1. Service are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 3.2. Adjustments made during the service are in accordance with manufacturer/component supplier specifications
4. Prepare vehicle/equipment for use or storage	4.1. Service schedule documentation is completed 4.2. Final inspection is made to ensure protective guards, safety features and cowlings are in place 4.3. Final inspection is made to ensure work is to workplace expectations 4.4. Vehicle/equipment is cleaned for use or storage to workplace expectations 4.5. Job card is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures

REQUIRED SKILLS AND KNOWLEDGE

- apply analytical skills required for identification and analysis of technical information
- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining information from customers
- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to own work activities, including making good use of time and resources, sorting out priorities and monitoring one's own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use mathematical ideas and techniques to correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to the inspection and service of suspension systems, including the use of measuring equipment, computerised technology, specialist tooling and testing devices communication devices, the reporting/documenting of results and diagnostic and specialised tooling and equipment

Required knowledge

A working knowledge of:

- OH&S regulations/requirements, equipment, material and personal safety requirements
- operating principles of suspension systems relevant to the qualification to which it is applied
- dangers of working with stored energy
- types and layout of service/repair manuals (hard copy and electronic)
- suspension system servicing procedures
- suspension system testing procedures
- enterprise quality procedures
- work organisation and planning processes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- conducting the inspection and servicing a range of suspension systems in accordance with workplace and manufacturer/component supplier requirements
- accurately interpreting test results
- completing service of suspension system and associated components within workplace timeframes
- vehicle/equipment is presented to customer in compliance with workplace requirements

Context of, and specific resources for assessment

Application of competence is to be assessed in the workplace or simulated worksite

Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints

Assessment is to comply with regulatory requirements, including Australian Standards

The following resources should be made available:

- workplace location or simulated workplace
- material relevant to the inspection and servicing of suspension systems
- equipment, hand and power tooling appropriate to the inspection and servicing of suspension systems
- activities covering mandatory task requirements
- specifications and work instructions

EVIDENCE GUIDE**Method of assessment**

Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package

Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge

Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies

Assessment may be applied under project related conditions and require evidence of process

Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances

It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements

Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

Guidance information for assessment**Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Suspension systems	Suspension systems may be gas, hydraulic, pneumatic, mechanical and rubber suspension, and found on light and heavy vehicles, trailers, motorcycles and outdoor power equipment
Systems	Systems may include lateral and longitudinal arms, independent suspension, ball joints, rose joints, self levelling device, ride control, height control and tracked type systems
Methods	Methods are to include: • functional testing, pressure testing, measurement • visual, aural and functional assessments (including damage, corrosion, leakage, wear) • adjustment of shock absorbers
OH&S	OH&S requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with vehicular movement, hazardous substances, machinery movement and operation, manual lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to emergency shutdown and stopping of equipment, operating safely in the event of fires, enterprise first aid requirements and site evacuation

RANGE STATEMENT	
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include hand tooling, lifting equipment, safety stands and supporting equipment, measuring equipment, power tooling and testing equipment
Materials	Materials may include spare parts, lubricants and fluids and cleaning materials
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to the inspection and servicing of suspension systems • regulatory/legislative requirements pertaining to the automotive industry, including Australian Design Rules • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or

RANGE STATEMENT

	external persons
	• Australian Standards

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT311166A Repair air braking systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to carry out the repair of air braking systems and associated components.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirement, preparation for work, testing, analysis and repair of air braking systems and associated components and completion of work finalisation processes, including clean-up and documentation. Work involves vehicles equipped with air braking systems. Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to repair air braking system and associated components	1.1. Nature and scope of work requirements are identified and confirmed 1.2. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 1.3. Procedures and information such as workshop manuals and specifications, and tooling, are sourced 1.4. Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5. Technical and/or calibration requirements for repair of air braking systems are sourced and support equipment is identified and prepared 1.6. Warnings in relation to working with air braking systems are observed

ELEMENT	PERFORMANCE CRITERIA
2. Test air braking systems and analyse results	2.1. Methods for tests are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 2.2. Air braking test results are compared with manufacturer/ component supplier specifications to indicate compliance or non-compliance 2.3. Results are documented with evidence and supporting information and recommendation(s) made 2.4. Report is forwarded to persons for action in accordance with workplace procedures
3. Repair air braking system	3.1. Methods for repair are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 3.2. Adjustments made during the repair are in accordance with manufacturer/component supplier specifications
4. Prepare vehicle for use or storage	4.1. Repair schedule documentation is completed 4.2. Final inspection is made to ensure protective guards, safety features and cowlings are in place 4.3. Final inspection is made to ensure work is to workplace expectations 4.4. Vehicle is cleaned for use or storage to workplace expectations 4.5. Job card is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures
- apply analytical skills for identification and analysis of technical information
- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining

REQUIRED SKILLS AND KNOWLEDGE

- information from customers
- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to own work activities, including making good use of time and resources, sorting out priorities and monitoring own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use mathematical ideas and techniques to correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to the repair of air braking systems, including the use of measuring equipment, computerised technology and communication devices and the documenting/recording of results

Required knowledge

A working knowledge of:

- OH&S regulations/requirements, equipment, material and personal safety requirements
- dangers of working with air braking systems
- operating principles of air braking systems and their relationship to each other
- types and layout of service/repair manuals (hard copy and electronic)
- test procedures
- repair procedures
- enterprise quality procedures
- work organisation and planning processes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of: • observing safety procedures and requirements • communicating effectively with others involved in or affected by the work • selecting methods and techniques appropriate to the circumstances • completing preparatory activity in a systematic manner • testing air braking system for faults including internal and external air leaks • interpreting test results • conducting repair in accordance with workplace and manufacturer/component supplier requirements • completing repair of air braking systems and associated components within workplace timeframes • vehicle presentation to customer in compliance with workplace requirements
Context of, and specific resources for assessment	Application of competence is to be assessed in the workplace or simulated worksite Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints Assessment is to comply with regulatory requirements, including Australian Standards The following resources should be made available: • workplace location or simulated workplace • material relevant to the repair of air braking systems • equipment, hand and power tooling appropriate to the repair of air braking systems • activities covering mandatory task requirements • specifications and work instructions
Method of assessment	Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies

EVIDENCE GUIDE

	Assessment may be applied under project related conditions and require evidence of process Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Components	Components may include compressors, actuators, pressure lines, receivers and valves
OH&S	OH&S requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances

RANGE STATEMENT	
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include hand tooling, pressure gauges and brake testing devices
Materials	Materials may include spare parts and cleaning materials
Communications	Communications are to include but are not limited to verbal and visual instructions and fault documenting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers

RANGE STATEMENT**Information/documents**

Sources of information/documents may include:

- verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches
- safe work procedures related to the repair of air braking systems and associated components
- regulatory/legislative requirements pertaining to automotive industry, including Australian Design Rules
- engineer's design specifications and instructions
- organisation work specifications and requirements
- instructions issued by authorised enterprise or external persons
- Australian Standards

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT411145A Overhaul air braking systems/components

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to carry out the overhaul of air braking systems/components

Application of the Unit

Application of the unit	The unit includes identification and confirmation of the work requirement, preparation for work, testing, analysis of results, disassembly, overhaul and reassembly of air braking systems and components and completion of work finalisation processes, including clean-up and documentation. Work involved includes vehicles fitted with air braking systems. Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to test air braking systems/components	1.1. Nature and scope of the work requirements are identified and confirmed 1.2. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 1.3. Procedures and information such as workshop manuals, specifications and tooling, are sourced 1.4. Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5. Technical and/or calibration requirements for testing air braking systems are sourced and support equipment is identified and prepared 1.6. Warnings in relation to working with air braking

ELEMENT	PERFORMANCE CRITERIA
	systems are observed
2. Test air braking systems/ components and analyse results	2.1. Methods for the conduct of the air braking systems tests are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 2.2. Results are compared with manufacturer/component supplier specifications to indicate compliance or non-compliance 2.3. Results are documented with evidence and supporting information and recommendation(s) made 2.4. Report is forwarded to appropriate persons for action in accordance with workplace procedures
3. Prepare to disassemble and overhaul air braking systems/components	3.1. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 3.2. Procedures and information required are identified and sourced 3.3. Technical and tooling requirements for the disassembly and overhaul are identified and support equipment is identified and prepared
4. Carry out the overhaul and reassembly of air braking systems/ components	4.1. Methods for the conduct of the overhaul and reassembly are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 4.2. All adjustments made during the overhaul are in accordance with manufacturer/component supplier specifications
5. Prepare vehicle/ equipment for use or storage	5.1. Overhaul schedule documentation is completed 5.2. Final inspection is made to ensure protective guards, safety features and cowlings are in place 5.3. Final inspection is made to ensure work is to workplace expectations 5.4. Vehicle/equipment is cleaned for use or stored to workplace expectations 5.5. Job card is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures
- apply analytical skills required for identification and analysis of technical information
- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining information from customers
- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to own work activities, including making good use of time and resources, sorting out priorities and monitoring own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- the capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and desired solution are clearly evident and in situations requiring critical thinking and a creative approach to achieve an outcome
- use mathematical ideas and techniques to calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to overhauling air braking systems/components, including the use of measuring equipment, computerised technology and communication devices and reporting/documenting of results

Required knowledge

A working knowledge of:

- OH&S regulations/requirements, equipment, material and personal safety requirements
- dangers of working with air braking systems
- operating principles of air braking systems/components and their relationship to each other
- types and layout of service/repair manuals (hard copy and electronic)
- air braking systems inspection/service and repair procedures
- air braking systems overhaul procedures
- enterprise quality procedures
- work organisation and planning processes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- interpreting of the test results
- conducting the overhaul in accordance with workplace and manufacturer/component supplier requirements
- completing overhaul of a range of air braking systems and associated components within workplace timeframes
- vehicle/equipment presentation to customer in compliance with workplace requirements

Context of, and specific resources for assessment

Application of competence is to be assessed in the workplace or simulated worksite

Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints

Assessment is to comply with regulatory requirements, including Australian Standards

The following resources should be made available:

- workplace location or simulated workplace
- materials relevant to overhauling air braking

EVIDENCE GUIDE	
	systems/components • equipment, hand and power tooling appropriate to overhauling air braking systems/components • activities covering the mandatory task requirements • specifications and work instructions
Method of assessment	Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies Assessment may be applied under project related conditions (real or simulated) and require evidence of process Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances It is preferable assessment reflects a process rather than an event and occurs over a period of time to cover the varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other appropriate persons subject to agreed authentication arrangements Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT	
work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Overhaul methods and sequences	Overhaul methods and sequences are to include the complete dismantling of component parts, measuring and evaluation of wear, the replacement, repair, rebuilding or reconditioning of parts comparable to original parts, the assembly of parts, performance of functional testing and the completion of records
OH&S	OH&S requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management

RANGE STATEMENT	
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include hand tooling, meters, gauges and load testing devices
Materials	Materials may include fluids, spare parts and cleaning materials
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to the overhaul of air braking systems and components • regulatory/legislative requirements pertaining to the automotive industry, including Australian Design Rules • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian Standards

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT466208A Carry out diagnosis of complex system faults

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to diagnose faults in systems integrating two or more automotive systems or incorporating three or more of mechanical, hydraulic, pneumatic, electrical or electronic media.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of the work requirement, preparation for work, diagnosis and identification of the causes of faults, establishment of the repair requirements and completion of work finalisation processes, including clean-up and documentation. The unit of competence should be contextualised to the qualification it is being applied. Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for diagnostic procedure	1.1. Nature and scope of the work requirements are identified and confirmed. 1.2. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work. 1.3. Technical and/or calibration requirements for testing and diagnosis are sourced and support equipment is identified and prepared.
2. Analyse reported faults	2.1. Information is gathered from all sources to provide a full overview of all faults and conditions under which they occur. 2.2. Function and operation of the system when operating correctly are identified. 2.3. Systematic fault-finding processes are used across

ELEMENT	PERFORMANCE CRITERIA
	relevant systems to determine the extent of the fault. 2.4. Additional technical sources are consulted to assist with analysis, if necessary. 2.5. Actual faults are distinguished from perceived faults.
3. Identify causes of faults	3.1. Diagnostic equipment and tests are selected to facilitate precise identification of faults and causes. 3.2. Tests are applied systematically and efficiently to gather precise data on system operation. 3.3. Appropriate use is made of technical information to compare gathered data with specifications. 3.4. Test results and gathered data are compared to system specifications and normal functions, and discrepancies are identified. 3.5. Source/cause of fault is isolated and confirmed.
4. Establish repair requirements	4.1. Viability of repair or replacement is assessed. 4.2. Appropriate repair procedures are identified and prescribed to meet customer service requirements. 4.3. Repair requirements are clearly and legibly documented and/or communicated to appropriate persons. 4.4. Repairs involving equipment/skills not held in the workshop are sourced from specialist workshops. 4.5. Customer is informed of the diagnosis and repair requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures
- apply analytical skills required for identification and analysis of technical information
- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining

REQUIRED SKILLS AND KNOWLEDGE

information from customers

- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to own work activities, including making good use of time and resources, sorting out priorities and monitoring own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- the capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and desired solution are clearly evident and in situations requiring critical thinking and a creative approach to achieve an outcome
- use mathematical ideas and techniques to calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to the diagnosis of complex system faults, including the use of measuring equipment, computerised technology and electronics, communication devices and reporting/documenting of results

Required knowledge

A working knowledge of:

- OH&S regulations/requirements, equipment, material and personal safety requirements
- function and operation of the appropriate complex automotive systems
- symptom and cause differentiation
- diagnostic procedures and problem-solving techniques
- test procedures and test instrument application
- documenting and reporting procedures
- repair procedures
- enterprise quality procedures
- work organisation and planning processes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of: • observing safety procedures and requirements • communicating effectively with others involved in or affected by the work • selecting methods and techniques appropriate to the circumstances • completing preparatory activity in a systematic manner • analysing faults in complex systems, identifying the cause(s) of faults and establishing repair requirements within an established timeframe for faults incorporating at least three of the following single systems: mechanical, hydraulic, pneumatic and electrical/electronic.
Context of, and specific resources for assessment	Application of competence is to be assessed in the workplace or simulated worksite. Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints. Assessment is to comply with regulatory requirements, including Australian Standards. The following resources should be made available: • workplace location or simulated workplace • materials relevant to the diagnosis of complex system faults • equipment, hand and power tooling appropriate to the diagnosis of complex system faults • activities covering the mandatory task requirements • specifications and work instructions.
Method of assessment	Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package. Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge.

EVIDENCE GUIDE	
	Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies. Assessment may be applied under project related conditions (real or simulated) and require evidence of process. Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. It is preferable assessment reflects a process rather than an event and occurs over a period of time to cover the varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other appropriate persons subject to agreed authentication arrangements. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Complex systems	A complex system is defined as one which integrates two or more automotive systems, or incorporates three or more of mechanical, hydraulic, pneumatic, electrical or electronic media. Examples include hydraulically/electronically controlled automatic transmissions, anti-lock braking systems, engine management

RANGE STATEMENT	
	systems integrating ignition, fuel and transmission control systems. Workplace example: Customer reports intermittent shifting into top gear on an electronically controlled automatic transmission. The customer is asked a number of questions about the conditions in which the problem occurs (e.g. frequency of the problem, speed, road conditions). A road test is conducted, and the technician detects intermittent speedometer operation. After testing of electrical connections, components and sensors, the intermittent speedometer operation is confirmed to be the problem. Repair requirements are determined to be securing the connections on the speedometer wiring.
Diagnostic methods	Diagnostic methods are to include: - questioning of customer - road testing - hydraulic testing (e.g. performance testing of power steering systems) - electrical testing (e.g. performance testing of engine starting systems) - electronic testing (e.g. electronic interface diagnostic equipment) - mechanical testing (e.g. compression testing on engines) - chemical testing (e.g. testing of cooling systems) - technical/service manuals - component/equipment service history - body measurements
OH&S	OH&S requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances

RANGE STATEMENT	
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include testing equipment, meters, CRO, code readers, gauges, measuring equipment, gas analysers and sensors
Materials	Materials may include cleaning materials.
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers

RANGE STATEMENT**Information/documents**

Sources of information/documents may include:

- verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches
- safe work procedures related to diagnosis of complex system faults
- regulatory/legislative requirements pertaining to the automotive industry, including Australian design rules
- engineer's design specifications and instructions
- organisation work specifications and requirements
- instructions issued by authorised enterprise or external persons
- Australian standards

Unit Sector(s)**Unit sector**

Technical

Co-requisite units

Co-requisite units		

Competency field**Competency field**

AURT570093A Analyse and evaluate light vehicle steering and suspension system faults

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate light vehicle steering and suspension systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning light vehicle steering and suspension systems are accessed and interpreted. 1.3. OH&S requirements, including equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of technical support information and available on-board

ELEMENT	PERFORMANCE CRITERIA
	diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Light vehicle steering and suspension system components are prepared for the diagnostic process, including park-up, isolation and cleaning.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.
5. Restore the	5.1. Materials that can be reused is collected and stored.

ELEMENT	PERFORMANCE CRITERIA
workplace	5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary light vehicle steering and suspension systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.
- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance

REQUIRED SKILLS AND KNOWLEDGE

equipment, tooling, calculators and measuring devices.

Required knowledge

- light vehicle terminology and definitions.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- basic electrical theory covering voltage, current, resistance, power, magnetics and inductance.
- theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
- steering system theory, including steering angles (camber, castor, steering axis inclination, toe-in and toe-out).
- functions of hydraulic pressure with steering and suspension systems.
- detailed knowledge of the types, function, operations and limitations of light vehicle manual steering, power steering and suspension systems/components.
- general knowledge of automotive digital computing systems.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self and others

EVIDENCE GUIDE	
	• prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three different light vehicle steering and suspension systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different light vehicle steering and suspension systems. • Document and report the diagnostic process and findings and recommended rectification for two of the above. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, material, work instructions and deadlines. Access to a requirement and objectives for analysis and evaluation, light vehicle steering and suspension systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objectives, research facilities and technical information, and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

EVIDENCE GUIDE

Guidance information for assessment

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Failure analysis and evaluation process

The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.

Vehicles

Light vehicles are to include two-wheel and four-wheel drive vehicles.

Steering systems

Steering systems to be covered in this unit are to include mechanical and power.

Steering failures

Light vehicle steering failures covered by this unit are to include tyre wear, driveability, vibration, directional stability, tracking, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.

Suspension systems

Suspension systems are to cover coil, spring and spring leaf types.

Suspension system failures

Light vehicle suspension system failures covered by this unit are to include erratic steering, mechanical damage, sub-frame alignment, component damage and systems modifications.

Unit context

- OH&S, vehicle industry regulations, safety management systems, hazardous substances and

RANGE STATEMENT	
	dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluation criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to industry and enterprise standards.
Testing equipment	Testing equipment is to include tape measure, tyre pressure gauge, string line, adjustable electronic bubble level and may include laser wheel alignment system.
Tests	Tests to be conducted are to include ball-joint wear, camber, castor, leveller operation pitman arm specifications, ride height, steering access inclination, steering linkage specification, sub-frame alignment, thrust line, toe-in, toe-out turns, turning radius left/right, tyre pressures, tyre tread and wheel bearing specification.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and material. • Manufacturer/component supplier

RANGE STATEMENT

	specifications, schematics and operational procedures related to light vehicle steering and suspension systems. • Australian design rules. • Vehicle industry regulations. • Vehicle industry publications related to emerging steering and suspension system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT570193A Analyse and evaluate light vehicle driveline system faults

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate light vehicle driveline systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements 1.2. Benchmark specifications for correctly functioning light vehicle driveline systems are accessed and interpreted 1.3. OH&S requirement, including equipment and system isolation requirements and personal protection needs are observed throughout the work 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objectives of the work 2.2. System performance achievements and/or discrepancies are identified from an analysis of technical support information and available on-board

ELEMENT	PERFORMANCE CRITERIA
	diagnostic systems 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use 2.6. Light vehicle driveline system components are prepared for the diagnostic process, including park-up, isolation and cleaning
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented 3.4. Analytical findings and results are evaluated against the agreed criteria 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.
5. Restore the	5.1. Materials that can be reused is collected and stored.

ELEMENT	PERFORMANCE CRITERIA
workplace	5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary light vehicle driveline systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.
- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance

REQUIRED SKILLS AND KNOWLEDGE

equipment, tooling, calculators and measuring devices.

Required knowledge

- light vehicle terminology and definitions.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- basic electrical theory covering voltage, current, resistance, power, magnetism and inductance.
- mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
- detailed knowledge of the types, function, operations and limitations of light vehicle clutch, torque converter, manual transmission, automatic transmission, drive shaft, final drive systems/components.
- detailed knowledge of the types, function, operations and limitations of four wheel drive system components using transfer cases, differentials and free wheel hubs.
- general knowledge of automotive digital computing systems.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self and others

EVIDENCE GUIDE	
	• prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three light vehicle driveline systems with real or simulated multi-system and intermittent faults, and identify, evaluate, select and document the most appropriate rectification measure. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for light vehicle driveline systems. • Document and report the diagnostic process and findings and recommended rectification for two of the above. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, material, work instructions and deadlines. Access to a requirement and objectives for analysis and evaluation, light vehicle driveline systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objectives, research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
Guidance information for	

EVIDENCE GUIDE**assessment****Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Failure analysis and evaluation process

The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.

Vehicles

Light vehicles are to include two wheel and four-wheel drive vehicles.

Driveline systems

Driveline systems are to cover all sub-systems and components, including clutches, torque converters, manual transmissions (including electric and clutch less), automatic transmissions, drive shafts and final drives.

Diagnosis

Diagnosis is to cover module and parts replacement in related electrical and electronic control systems.

Driveline system failures

- Driveline system failures covered by this unit are to include abnormal gear wear, abnormal clutch operations, contamination, hard shifting, harshness, loose mountings, leaks, lubrication, noises, transmission slippage and vibrations.
- Driveline system failures covered by this unit are to include indirect faults caused by the influence of external systems which may or may not be faulty in their primary operations.

Unit context

- OH&S requirements include vehicle industry regulations, safety management systems, hazardous substances and dangerous goods

RANGE STATEMENT	
	code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, OH&S, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures to industry and enterprise standards.
Testing equipment	Testing equipment is to include compound levels, pressure gauges, multimeters, tachometers and computerised diagnostic systems.
Tests	Tests to be conducted are to include lubricant inspection, pressure, road testing, sensor integrity and function, solenoid operation/function, wiring and power control ECU integrity.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and material. • Manufacturer/component supplier specifications, schematics and operational procedures related to light vehicle driveline systems. • Australian Design Rules. • Vehicle industry regulations.

RANGE STATEMENT

	Vehicle industry publications related to emerging steering and suspension system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT570293A Analyse and evaluate light vehicle engine and fuel system faults

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate light vehicle engine and fuel systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning light vehicle engines are accessed and interpreted. 1.3. OH&S requirements, including equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet objectives of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of technical support information and available on-board

ELEMENT	PERFORMANCE CRITERIA
	diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Light vehicle engine and fuel system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.
5. Restore the	5.1. Materials that can be reused is collected and stored.

ELEMENT	PERFORMANCE CRITERIA
workplace	5.2. Testing equipment and support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary light vehicle engine and fuel systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.
- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance equipment, tooling, calculators and measuring devices.

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

- light vehicle terminology and definitions.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- basic electrical theory covering voltage, current, resistance, power, magnetism and inductance.
- mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
- general knowledge of the types, functions, operations and limitations of light vehicle engines.
- detailed knowledge of the types, function, operations and limitations of light vehicle fuel, ignition, intake, exhaust, lubrication, cooling and engine mounting systems/ components.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of automotive digital computing systems.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self and others
 - prevent damage and wastage of goods, equipment

EVIDENCE GUIDE	
	and products • maintain required production output and product quality. • Complete failure analysis on a minimum of three light vehicle engine and fuel systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measures. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for light vehicle engine and fuel systems. • Document and report the diagnostic process and findings and recommended rectification for two of the above. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, material, work instructions and deadlines. Access to a requirement and objectives for analysis and evaluation, light vehicle engine and fuel systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objectives, research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure analysis and evaluation process	The objectives of the failure analysis and evaluation process may determine fault rectification measures, effect variation in system characteristics and parameters or enhancing system performance.
Engine and fuel systems	- Engine and fuel systems are to include two-stroke, four-stroke rotary, petrol engine to 8 litres and diesel engine to 8 litres. - Engine and fuel systems to be covered in this unit are to include the engine and related fuel, ignition, intake, exhaust, lubrication and cooling systems. Systems are to include innovative engine design and ceramic engine componentry.
Engine and fuel system failures	- Engine and fuel system failures covered by this unit are to include engine (poor performance, excessive oil consumption, engine stoppages), fuel (contamination, flow, pressure, leakage), ignition (no-start, no-run, misfire, erratic operation, lack of power, charging), intake (leakage, noise, vibration, inadequate control, exhaust (pressure, abnormal emissions), lubrication (pressure, flow, leakage, abnormal engine wear, inadequate filtration, sludge formation, excessive deposits, overheating), cooling (overcooling, insufficient cooler flow, coolant out of specification, lack of air flow, internal corrosion), mounting (noise, vibration, hardness, clutch shudder, erratic transmission control). - Engine and fuel system failures covered by this unit are to include indirect faults caused by the influence of external systems which may or

RANGE STATEMENT	
	may not be faulty in their primary operations.
Unit context	• OH&S requirements include vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures to industry and enterprise standards.
Testing equipment	Testing equipment is to include bore gauges, compression gauges, computer-based diagnostic system (direct and internet), cooling system analyser, dial gauges, exhaust gas analysers, micrometers, multimeter, oscilloscope, pressure gauges, stethoscope, telescopic gauges, temperature gauges, tachometer, timing lights, vacuum gauges, verniers, and may include anemometer, barometer, hygrometer, specific gravity gauge.
Tests	Tests are to include component wear analysis, compression, cylinder leakage, engine performance, exhaust gas sampling, flow, oil consumption, pressure, sample collection/processing, specific gravity, temperature and vacuum.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of

RANGE STATEMENT

	tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to light vehicle engine and fuel systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to emerging steering and suspension system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units	

Competency field

Competency field	

AURT570393A Analyse and evaluate light vehicle braking system faults

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate light vehicle braking systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning light vehicle braking systems are accessed and interpreted. 1.3. OH&S requirements, including equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of technical support information and available on-board

ELEMENT	PERFORMANCE CRITERIA
	diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Light vehicle braking system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.
5. Restore the	5.1. Materials that can be reused is collected and stored.

ELEMENT	PERFORMANCE CRITERIA
workplace	5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary light vehicle braking systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.
- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance

REQUIRED SKILLS AND KNOWLEDGE

equipment, tooling, calculators and measuring devices.

Required knowledge

- light vehicle terminology and definitions.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- basic theory covering electrics, hydraulics, friction, mechanical advantage, levers, heat, pressure and area.
- mechanical theory covering the concepts and principles of mechanical, hydraulic and electrical braking systems, including performance and balance.
- functions of brake fluid.
- detailed knowledge of the types, functions, operations and limitations of light vehicle braking systems/components.
- detailed knowledge of the types, function, operations and limitations of abs braking systems/components.
- detailed knowledge of the Australian Design Rules requirements related to light vehicle braking.
- working knowledge of the types, function, operations and limitations of light vehicle air braking (multiple trailer) systems/components.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of automotive digital computing systems.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of

EVIDENCE GUIDE

	equipment and use of personal protective equipment. - Follow work instructions, operating procedures and inspection processes to: - minimise the risk of injury to self and others - prevent damage and wastage of goods, equipment and products - maintain required production output and product quality. - Complete failure analyses on a minimum of three light vehicle braking systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. - Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for light vehicle braking systems. - Document and report the diagnostic process and findings and recommended rectification for two of the above. - Work effectively with others. - Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, material, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, light vehicle braking systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction

EVIDENCE GUIDE	
	with other functional units which together form part of the holistic work role
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure and analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Vehicles	Light vehicles are to include two wheel and four wheel drive vehicles.
Braking systems	Braking systems to be covered in this unit are to include disc, drum, ABS, AJPB, brake by wire and ceramic brakes.
Drum brakes	Drum brakes are to include leading/trailing, twin leading, duo servo, multiple shoe variations, cast iron and aluminium brake drums.
Park brakes	Park brakes are to include hand, foot, electric and Banksia type.
Electronic systems	Electronic systems are to include anti-lock braking systems and brake by wire.
Braking system failures	Braking system failures covered by this unit are to include indirect faults caused by the influence of external systems which may or may not be faulty in

RANGE STATEMENT	
	their primary operations.
Unit context	• OH&S requirements include vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to industry and enterprise standards.
Testing equipment	• Testing equipment is to include decelerometer, electronic brake fluid analyser, multimeter, data scanner, oscilloscopes, pressure gauges, vacuum gauge, brake tester. • Testing equipment may include a chassis dynamometer.
Tests	• Tests to be conducted are to include performance, brake fluid boiling point, rotor and drum wear, pad and lining thickness, brake pedal travel, handbrake mechanism travel, NVH, directional control and ABX operation and performance. • Tests may include braking during cornering, friction material wear rate, and disc drum and rotor temperature.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment.

RANGE STATEMENT

	• Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to light vehicle braking systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to emerging steering and suspension system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT575093A Analyse and evaluate electrical and electronic faults in stability/steering/suspension systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic stability/steering/suspension systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning electrical and electronic stability/steering/suspension systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of

ELEMENT	PERFORMANCE CRITERIA
	technical support information and available on-board diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/ component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Electrical and electronic stability/steering/suspension system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/ component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.

ELEMENT	PERFORMANCE CRITERIA
5. Restore the workplace	5.1. Materials that can be reused is collected and stored. 5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary electrical and electronic stability/steering/suspension systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

REQUIRED SKILLS AND KNOWLEDGE

- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance equipment, tooling, calculators and measuring devices.

Required knowledge

- basic mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- general knowledge of the types, functions and operations of stability, steering and suspension systems.
- general knowledge of the types, functions and operations of engine management systems.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- general knowledge of the concepts, types, functions, operations and limitations of electromechanical and electro-fluid sub-systems within light vehicle, mobile plant, and/or light marine engine management systems.
- detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetism, inductance, discrete electronic components, logic families and radio frequency.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.
- general knowledge of personal computer operation.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.

EVIDENCE GUIDE	
unit	- Follow work instructions, operating procedures and inspection processes to: - minimise the risk of injury to self and others - prevent damage and wastage of goods, equipment and products - maintain required production output and product quality. - Complete failure analyses on a minimum of three different stability, steering and suspension systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. - Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different stability, steering and suspension systems. - Work effectively with others. - Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, electrical and electronic stability/steering/suspension systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.

EVIDENCE GUIDE

Guidance information for assessment

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Failure analysis and evaluation process

The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.

Systems

Systems are to include traction, stability, steering and suspension systems across the range of vehicle types. Coverage is to include electronic stability systems, vehicle dynamic control, closed loop electronic steering and multi-class bus systems.

Electrical and electronic failures in stability/steering/ suspension system

Electrical and electronic failures in stability/steering/ suspension system covered by this unit are to include direct faults in input sensors, output actuators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.

Stability/steering and suspension system failures

Stability/steering and suspension system failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.

Unit context

- OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances

RANGE STATEMENT	
	and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	• Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include the disarming of supplementary restraint systems (SRS) by manufacturer/ component supplier specifications.
Testing equipment	Testing equipment is to include analogue and digital multimeters, lab oscilloscopes, data scanners and test lights, test LEDs and pulse generators, and may include other manufacturer/component supplier testing equipment.
Tests	Tests to be conducted are to include wiring and connector integrity, operator and specification of input and output devices, controlling electronic components and computers, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication.

RANGE STATEMENT

	• Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to stability/steering and suspension systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to emerging steering and suspension system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT575193A Analyse and evaluate electrical and electronic faults in electric over hydraulic systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electric over hydraulic systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning electric over hydraulic systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of

ELEMENT	PERFORMANCE CRITERIA
	technical support information and available on-board diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Electric over hydraulic system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.

ELEMENT	PERFORMANCE CRITERIA
5. Restore the workplace	5.1. Materials that can be reused is collected and stored. 5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary electric over hydraulic systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

REQUIRED SKILLS AND KNOWLEDGE

- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance equipment, tooling, calculators and measuring devices.

Required knowledge

- basic mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- general knowledge of the types, functions and operations of electric over hydraulic systems.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- general knowledge of concepts, types, functions, operations and limitations of electromechanical and electro-fluid sub-systems within light vehicle, mobile plant, heavy vehicle, light marine electric over hydraulic systems.
- detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetism, inductance, discrete electronic components, logic families and radio frequency.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.
- general knowledge of personal computer operations.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and inspection processes to:

EVIDENCE GUIDE	
	• minimise the risk of injury to self and others • prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three different electric over hydraulic systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different electric over hydraulic systems. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, electric over hydraulic systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Electric over hydraulic systems	Electric over hydraulic systems are characterised as those using solenoids to control hydraulic flow and they may include integrated computer controlled systems. Examples are garbage compactors, crane rams, steering control, excavator bucket control, steering rudder control.
Electric over hydraulic system electrical and electronic failures	Electric over hydraulic system electrical and electronic failures covered by this unit are to include direct faults in input sensors, output actuators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.
Electric over hydraulic system failures	Electric over hydraulic system failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and

RANGE STATEMENT	
	organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include where appropriate the disarming of supplementary restraint systems (SRS) by manufacturer/component supplier specifications.
Testing equipment	Testing equipment is to include analogue and digital multimeters, lab oscilloscopes, data scanners, test lights, test LEDs and pulse generators, and may include other manufacturer/component supplier testing equipment.
Tests	Tests to be conducted are to include wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to electric over hydraulic

RANGE STATEMENT

	systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to emerging electric over hydraulic system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT575293A Analyse and evaluate electrical and electronic faults in engine management systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic faults in engine management systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning engine management systems are accessed and interpreted. 1.3. National Environmental Protection Measure for Diesel Vehicles (Guidelines) is sourced and observed throughout the work as applicable to tasks. 1.4. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.5. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.6. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis	2.1. Evaluative criteria are developed/adopted to meet the

ELEMENT	PERFORMANCE CRITERIA
and evaluation	objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of technical support information and available on-board diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Engine management system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported

ELEMENT	PERFORMANCE CRITERIA
	in accordance with regulatory and enterprise requirements and practices.
5. Restore the workplace	5.1. Materials that can be reused is collected and stored. 5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary tracked, undercarriage and suspension systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and

REQUIRED SKILLS AND KNOWLEDGE

allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage

- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance equipment, tooling, calculators and measuring devices.

Required knowledge

- basic mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- general knowledge of the types, functions and operations of diesel, petrol, lpg and cng engine system operation.
- general knowledge of the types, functions and operations of engine management systems.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- general knowledge of the concepts, types, functions, operations and limitations of electromechanical and electro-fluid sub-systems within light vehicle, mobile plant, and/or light marine engine management systems.
- detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetics, inductance, discrete electronic components, logic families, and radio frequency.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.
- national environment protection measures for diesel vehicles as applicable to tasks.
- general knowledge of personal computer operation.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Interpret work order and locate and apply information. • Apply safety requirements, including the isolation of equipment and use of personal protective equipment. • Follow work instructions, operating procedures and inspection processes to: • minimise the risk of injury to self and others • prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three different engine management systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different engine management systems. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, engine management systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic

EVIDENCE GUIDE	
	work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Engine management systems	Engine management systems are characterised as those using a digital computer to manage fuel, ignition, engine speed, performance and engine emissions and also other optional equipment systems.
Coverage	Coverage is to include fuel cell technology/hydrogen, on-line maintenance and remote diagnostics, common rail diesel direct injection, drive by wire, multi-class bus systems and closed loop diesel engine management systems.
Electrical and electronic failures in engine management systems	Electrical and electronic failures in engine management systems covered by this unit are to include direct faults in input sensors, output actuators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.

RANGE STATEMENT	
Engine management system failures	Engine management system failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with National Environment Protection Measures for Diesel Vehicles as applicable to tasks. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include the disarming of supplementary restraint systems (SRS) by manufacturer/ component supplier specifications.
Testing equipment	Testing equipment is to include four-gas exhaust gas analyser, compression gauge, feeler gauge, engine tune oscilloscope, analogue and digital analogue and digital multimeters, lab oscilloscopes, data scanners, test lights, test LED's, pulse generators, noid lamps, fuel pressure gauges, vacuum gauge and may include dynamometer and manufacturer/component supplier testing equipment.
Tests	Tests to be conducted are to include engine

RANGE STATEMENT	
	compression, valve adjustment and timing, exhaust gas analysis, fuel flow, fuel pressure, wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, data interpretation, and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to engine management systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to emerging engine management system technology and technology changes. • National Environment Protection Measures for Diesel Vehicles as applicable to tasks.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units	

Co-requisite units		

Competency field

Competency field	

AURT575393A Analyse and evaluate electrical and electronic faults in transmission/driveline systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic faults in transmission/driveline systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning electrical and electronic transmission/driveline systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of

ELEMENT	PERFORMANCE CRITERIA
	technical support information and available on-board diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Electrical and electronic transmission/driveline system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.

ELEMENT	PERFORMANCE CRITERIA
5. Restore the workplace	5.1. Materials that can be reused is collected and stored. 5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary electrical and electronic transmission/driveline systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems input.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

REQUIRED SKILLS AND KNOWLEDGE

- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance equipment, tooling, calculators and measuring devices.

Required knowledge

- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- general knowledge of the types, functions and operations of transmission/driveline systems.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- general knowledge of the concepts, types, functions, operations and limitations of electromechanical and electro-fluid sub-systems within light vehicle, mobile plant, heavy vehicle, transmission/driveline systems.
- detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetics, inductance, discrete electronic components, logic families and radio frequency.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.
- general knowledge of personal computer operation.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self and others
 - prevent damage and wastage of goods, equipment and

EVIDENCE GUIDE	
	products - maintain required production output and product quality. - Complete failure analyses on a minimum of three different transmission/driveline systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. - Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different transmission/driveline systems. - Work effectively with others. - Modify activities to cater for variations in workplace context and environment. - Basic mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, operational electrical and electronic transmission/driveline systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Transmission/driveline systems	Transmission/driveline systems to be covered by this unit include clutches, torque converters, mechanical and automatic transmissions, drive and power take-off shafts, and differentials. Coverage is to include mechatronic modules and multi-class bus systems.
Transmission/driveline systems electrical and electronic failures	Transmission/driveline systems electrical and electronic failures covered by this unit are to include direct faults in input sensors, output actuators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.
Transmission/driveline systems failures	Transmission/driveline systems failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code, and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design

RANGE STATEMENT	
	Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include the disarming of supplementary restraint systems (SRS) by manufacturer/ component supplier specifications.
Testing equipment	Testing equipment is to include multimeters, lab oscilloscopes, data scanners, test lights, test LEDs, and may include pulse generators and manufacturer/component supplier testing equipment.
Tests	Tests to be conducted are to include wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to transmission/driveline

RANGE STATEMENT

	systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to emerging transmission/driveline system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT575493A Analyse and evaluate electrical and electronic faults in braking systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic faults in braking systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning electrical and electronic braking systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of

ELEMENT	PERFORMANCE CRITERIA
	technical support information and available on-board diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Electrical and electronic braking system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.

ELEMENT	PERFORMANCE CRITERIA
5. Restore the workplace	5.1. Materials that can be reused is collected and stored. 5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary electrical and electronic braking systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

REQUIRED SKILLS AND KNOWLEDGE

- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance equipment, tooling, calculators and measuring devices.

Required knowledge**Underpinning knowledge**

- basic mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- general knowledge of the types, functions and operations of braking systems.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- general knowledge of the concepts, types, functions, operations and limitations of electromechanical and electro-fluid sub-systems within light vehicle, mobile plant, heavy vehicle, transmission/driveline systems.
- detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetism, inductance, discrete electronic components, logic families and radio frequency.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.
- general knowledge of personal computer operation.

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and

EVIDENCE GUIDE

	inspection processes to: • minimise the risk of injury to self and others • prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three different braking systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different braking systems. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, operational electrical and electronic braking systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Braking systems	Braking systems to be covered here are to include ABS, engine brakes, electric retarders, electric trailer brakes, brake by wire and multi-class bus systems.
Braking systems electrical and electronic failures	Braking systems electrical and electronic failures covered by this unit are to include direct faults in input sensors, output actuators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.
Braking systems failures	Braking systems failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate

RANGE STATEMENT	
	research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include the disarming of supplementary restraint systems (SRS) by manufacturer/ component supplier specifications.
Testing equipment	Testing equipment is to include analogue and digital multimeters, lab oscilloscopes, data scanners, test lights and test LEDs, and may include pulse generators and manufacturer/component supplier testing equipment.
Tests	Tests to be conducted are to include wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to braking systems. • Australian Design Rules. • Vehicle industry regulations.

RANGE STATEMENT	
	Vehicle industry publications related to braking system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT575593A Analyse and evaluate electrical and electronic faults in safety systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic faults in safety systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning safety systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of technical support information and available on-board

ELEMENT	PERFORMANCE CRITERIA
	diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Safety system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.
5. Restore the	5.1. Materials that can be reused is collected and stored.

ELEMENT	PERFORMANCE CRITERIA
workplace	5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary safety systems, monitoring and testing processes, diagnostic methods and options, and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.
- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance

REQUIRED SKILLS AND KNOWLEDGE

equipment, tooling, calculators and measuring devices.

Required knowledge

- basic mechanical theory covering the concepts and principles of mechanical, and pneumatic systems.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- general knowledge of the types, functions and operations of safety systems.
- general knowledge of acoustics, human hearing system, radio waves, amplitude modulation, frequency modulation, wavelength, stereo and signal processing and SWR.
- general knowledge of the concepts, types, functions, operations and limitations of electromechanical and electronic sub-systems within light vehicle, mobile plant, heavy vehicle and light marine safety systems.
- detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetism, inductance, discrete electronic components, logic families, and radio frequency.
- general knowledge of the theory of diagnosis, including concept, design and planning
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.
- general knowledge of personal computer operation.

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and inspection processes to:

EVIDENCE GUIDE

	• minimise the risk of injury to self and others • prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three different electronic safety systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different electronic safety systems. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, operational safety systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Safety systems	Safety systems in this unit are to include fire suppressing, work load detecting, tyre pressure control, speed/load limiting, traction control, seat belt pre-tensioning, roll over protection, object detection, navigation aids, intelligent transport systems, intelligent SRS systems, adaptive cruise control, multi-class Bus systems, active and passive collision avoidance, infrared vision, lighting, windscreen wiper control, depth sounders, emergency distress systems, and CB and marine radio.
Safety systems electrical and electronic failures	Safety systems electrical and electronic failures covered by this unit are to include direct faults in input sensors, output actuators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.
Safety systems failures	Safety systems failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design

RANGE STATEMENT	
	Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include the disarming of supplementary restraint systems (SRS) by manufacturer/ component supplier specifications.
Testing equipment	Testing equipment may include analogue and digital multimeters, data scanners, test lights, test LEDs, lab oscilloscopes, acoustic analysers and manufacturer/ component supplier testing equipment.
Tests	Tests to be conducted are to include wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to automotive safety

RANGE STATEMENT	
	systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to automotive safety system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT575693A Analyse and evaluate electrical and electronic faults in monitoring/protection systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic faults in monitoring/protection systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning monitoring/protection systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of

ELEMENT	PERFORMANCE CRITERIA
	technical support information and available on-board diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Monitoring/protection system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.

ELEMENT	PERFORMANCE CRITERIA
5. Restore the workplace	5.1. Materials that can be reused is collected and stored. 5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary monitoring/protection systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

REQUIRED SKILLS AND KNOWLEDGE

- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance equipment, tooling, calculators and measuring devices.

Required knowledge

- basic mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- general knowledge of the types, functions and operations of monitoring/protection systems.
- general knowledge of the concepts, types, functions, operations and limitations of electromechanical and electro-fluid sub-systems within light vehicle, mobile plant, heavy vehicle and light marine monitoring/protection systems.
- detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetism, inductance, discrete electronic components, logic families, and radio frequency.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.
- general knowledge of personal computer operation.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and inspection processes to:

EVIDENCE GUIDE	
	• minimise the risk of injury to self and others • prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three different automotive monitoring/protection systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different automotive monitoring/protection systems. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, operational monitoring/protection systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Systems monitored	Systems monitored are to include engine, transmission/ driveline, body, auxiliary systems, safety critical systems and shutdown.
Monitoring/protection systems	Monitoring/protection systems are to cover display types, including LCD, VFD, CRT, HUD, reconfigurable systems, electronic analogue display, on-board diagnostics, remote/wireless monitoring systems and multi-class bus systems.
Monitoring/protection systems electrical and electronic failures	Monitoring/protection systems electrical and electronic failures covered by this unit are to include direct faults in input sensors, output actuators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.
Monitoring/protection systems failures	Monitoring/protection systems failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.
Unit context	OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures.

RANGE STATEMENT	
	• Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include the disarming of supplementary restraint systems (SRS) by manufacturer/ component supplier specifications.
Testing equipment	Testing equipment is to include analogue and digital multimeters, lab oscilloscopes, data scanners, test lights and test LEDs, and may include manufacturer/component supplier testing equipment and pulse generators.
Tests	Tests to be conducted are to include wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier

RANGE STATEMENT	
	specifications, schematics and operational procedures related to automotive monitoring/protection systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to automotive monitoring/protection system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT575893A Analyse and evaluate electrical and electronic faults in convenience and entertainment systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic faults in convenience and entertainment systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning convenience and entertainment systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of

ELEMENT	PERFORMANCE CRITERIA
	technical support information and available on-board diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Convenience and entertainment system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.

ELEMENT	PERFORMANCE CRITERIA
5. Restore the workplace	5.1. Materials that can be reused is collected and stored. 5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary convenience and entertainment systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

REQUIRED SKILLS AND KNOWLEDGE

- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance equipment, tooling, calculators and measuring devices.

Required knowledge

- basic mechanical theory covering the concepts and principles of mechanical, and pneumatic systems.
- general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- general knowledge of the types, functions and operations of convenience and entertainment systems.
- general knowledge of the concepts, types, functions, operations and limitations of electromechanical and electronic sub-systems within convenience and entertainment systems.
- general knowledge of acoustics, human hearing system, radio waves, amplitude modulation, frequency modulation, wavelength, stereo and signal processing and SWR.
- detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetism, inductance, radio frequency, discrete electronic components, logic families, dc motors and solenoids.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.
- general knowledge of personal computer operation.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of

EVIDENCE GUIDE

demonstrate competency in this unit

- equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self and others
 - prevent damage and wastage of goods, equipment and products
 - maintain required production output and product quality.
- Complete failure analyses on a minimum of three different convenience and entertainment systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure.
- Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different convenience and entertainment systems.
- Work effectively with others.
- Modify activities to cater for variations in workplace context and environment.

Context of, and specific resources for assessment

Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines.

Access to a requirement and objective(s) for analysis and evaluation, operational convenience and entertainment systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.

Method of assessment

Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority.

Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances.

Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.

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Guidance information for assessment

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Failure analysis and evaluation process

The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.

Convenience and entertainment systems

Convenience and entertainment systems in this unit are to include telematic controls and multi-media or wheels, vehicle acoustics, tilt/trim, winch, voltage reducers, voltage inverters, central locking, power windows, sun roof, seat positioning, mirror positioning, steering wheel positioning, seatbelt positioning and multi-class bus systems.

Entertainment systems

Entertainment systems in this unit are to include audio and visual units, compact discs, analogue tapes, radio, speaker types, amplifiers, crossovers, balancers, aerials and multi-class bus systems.

Convenience and entertainment systems failures

Convenience and entertainment systems failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.

Unit context

- OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating

RANGE STATEMENT	
	procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include the disarming of supplementary restraint systems (SRS) by manufacturer/ component supplier specifications.
Testing equipment	Testing equipment is to include analogue and digital multimeters, data scanners, test lights, test LEDs, lab oscilloscopes, acoustic analysers and manufacturer/ component supplier testing equipment.
Tests	Tests to be conducted are to include wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, sound quality, SWR, winch, voltage reducers, voltage inverters, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for

RANGE STATEMENT	
	testing equipment and materials.
Information and procedures	• Manufacturer/component supplier specifications, schematics and operational procedures related to automotive convenience and entertainment systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to convenience and entertainment system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT575993A Analyse and evaluate electrical and electronic faults in theft deterrent systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic faults in theft deterrent systems in order to initiate action to sustain, vary or enhance performance. It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations.

Application of the Unit

Application of the unit	This unit requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. This unit of competence forms part of the inventory for an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning theft deterrent systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of technical support information and available on-board

ELEMENT	PERFORMANCE CRITERIA
	diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Theft deterrent system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstances, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.
5. Restore the	5.1. Materials that can be reused is collected and stored.

ELEMENT	PERFORMANCE CRITERIA
workplace	5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary theft deterrent systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.
- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance

REQUIRED SKILLS AND KNOWLEDGE	
equipment, tooling, calculators and measuring devices.	
Required knowledge	
• general knowledge of the theory of diagnosis, including concept, design and planning. • general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation. • general knowledge of the concepts, types, functions, operations and limitations theft deterrent systems. • detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetics, inductance, discrete electronic components, logic families and radio frequency. • detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment. • general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations. • general knowledge of personal computer operation.	

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Interpret work order and locate and apply information. • Apply safety requirements, including the isolation of equipment and use of personal protective equipment. • Follow work instructions, operating procedures and inspection processes to: • minimise the risk of injury to self and others • prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three different

EVIDENCE GUIDE	
	theft deterrent systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. - Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different theft deterrent systems. - Work effectively with others. - Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, operational theft deterrent systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Failure analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Theft deterrent systems	Theft deterrent systems are to include remote keyless entry (RKE), immobiliser system design, passive entry systems, two-way RKE, fingerprint technologies, rolling codes, transmitter and receiver operation and satellite systems.
Theft deterrent systems electrical and electronic failures	Theft deterrent systems electrical and electronic failures covered by this unit are to include direct faults in input sensors, output actuators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.
Theft deterrent systems failures	Theft deterrent systems failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.

RANGE STATEMENT	
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards.
Testing equipment	Testing equipment is to include analogue and digital multimeters, lab oscilloscopes, data scanners, test lights, test LEDs, and may include manufacturer/component supplier testing equipment.
Tests	Tests to be conducted are to include wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to theft deterrent systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to theft deterrent system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT576093A Analyse and evaluate electrical and electronic faults in electric and hybrid vehicle systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic faults in electric and hybrid vehicle systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning hybrid vehicle systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of technical support information and available on-board

ELEMENT	PERFORMANCE CRITERIA
	diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Hybrid vehicle system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.
5. Restore the	5.1. Materials that can be reused is collected and stored.

ELEMENT	PERFORMANCE CRITERIA
workplace	5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary hybrid vehicle systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.
- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance

REQUIRED SKILLS AND KNOWLEDGE
equipment, tooling, calculators and measuring devices.
Required knowledge
- mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems. - general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation. - general knowledge of the types, functions and operations of systems. - general knowledge of the theory of diagnosis, including concept, design and planning. - general knowledge of the concepts, types, functions, operations and limitations of electric and hybrid vehicle systems. - detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetism, inductance, high-voltage safety requirements, high-voltage battery technology, high-voltage inverter, high-voltage permanent magnet dc motors, high-voltage wire wound field magnet motors, high-voltage single and three-phase ac motors, high-voltage permanent magnet three-phase ac motors, dc stepper motors, series hybrid drive, parallel hybrid drive, discrete electronic components, logic families and radio frequency. - detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment. - general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations. - general knowledge of personal computer operation.

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	- Interpret work order and locate and apply information. - Apply safety requirements, including the isolation of equipment and use of personal protective equipment. - Follow work instructions, operating procedures and inspection processes to:

EVIDENCE GUIDE	
	• minimise the risk of injury to self and others • prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three different hybrid vehicle systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different hybrid vehicle systems. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, operational hybrid vehicle systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Electric and hybrid vehicle systems	Electric and hybrid vehicle systems are to include petrol/electric hybrid vehicles, series and parallel drive vehicles, industrial floor cleaners, forklifts and golf buggies.
Coverage	Coverage is to include battery technology, motor drive systems, motor controllers, air conditioning systems, electronic protection systems and multi-class bus systems.
Electric and hybrid vehicle systems electrical and electronic failures	Electric and hybrid vehicle systems electrical and electronic failures covered by this unit are to include direct faults in input sensors, output actuators, including inverters, high-voltage AC and DC motors, high-voltage generators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.
Electric and hybrid vehicle systems failures	Electric and hybrid vehicle systems failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.
Unit context	OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous

RANGE STATEMENT	
	goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include the disarming of supplementary restraint systems (SRS) by manufacturer/ component supplier specifications.
Testing equipment	Testing equipment is to include multimeters, lab oscilloscopes, data scanners, test lights, battery testers and test LEDs, and may include manufacturer/component supplier testing equipment.
Tests	Tests to be conducted are to include batteries, drive motor, generator, inverter, chargers, motor controller, emissions, wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for

RANGE STATEMENT

	testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to electric and hybrid vehicle systems. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to electric and hybrid vehicle system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT576193A Analyse and evaluate electrical and electronic faults in climate control systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to analyse and evaluate electrical and electronic faults in climate control systems in order to initiate action to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	It includes failure analysis covering the complex diagnosis of multi-system and intermittent faults as well as evaluation of performance achievements and variations. It also requires the candidate to identify, evaluate, select and document the most appropriate response to the stated objective of the analysis and evaluation process. The unit relates to an automotive technologist or subject matter specialist. It encompasses and builds on trade level competencies.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the work requirement	1.1. Work instructions and reports are used to determine the nature and objective of the analysis and evaluation requirements. 1.2. Benchmark specifications for correctly functioning climate control systems are accessed and interpreted. 1.3. OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.4. Effects of systemic deficiencies/discrepancies or faults are identified and confirmed from indirect and/or direct evidence. 1.5. Possible safety impacts of the work are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Prepare for analysis and evaluation	2.1. Evaluative criteria are developed/adopted to meet the objective of the work. 2.2. System performance achievements and/or discrepancies are identified from an analysis of technical support information and available on-board

ELEMENT	PERFORMANCE CRITERIA
	diagnostic systems. 2.3. Analytical and evaluative methodology, including diagnostic process, sequence, tests and testing equipment are developed and/or identified and selected from the range of available options. 2.4. Testing equipment is obtained and prepared for application in accordance with regulatory, manufacturer/component supplier and enterprise requirements. 2.5. Tooling and materials required to support the diagnostic process are identified, selected and prepared for use. 2.6. Climate control system components are prepared for the diagnostic process, including park-up, isolation and cleaning requirements.
3. Apply the analysis and evaluative methodology	3.1. Selected analytical and diagnostic process is followed in accordance with specifications and directions and/or the locally authorised method. 3.2. Tests and testing equipment are applied in accordance with regulatory requirements and manufacturer/component supplier specifications. 3.3. Analytical and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes, and documented. 3.4. Analytical findings and results are evaluated against the agreed criteria. 3.5. Valid conclusions are drawn from the available evidence and documented to enterprise requirements. 3.6. Information and detail related to the analysis and evaluation is provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Select response measure	4.1. Options for responding to the objective or need are identified from further research of technical support information. 4.2. A response option is selected from an analysis of the options, prevailing circumstance, regulatory requirements and commercial policies. 4.3. Selected response option is documented and reported in accordance with regulatory and enterprise requirements and practices.
5. Restore the	5.1. Materials that can be reused is collected and stored.

ELEMENT	PERFORMANCE CRITERIA
workplace	5.2. Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 5.3. Waste and scrap is removed following workplace procedures. 5.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.5. Unserviceable equipment is tagged and faults identified in accordance with workplace.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, organise and understand technical information related to contemporary climate control systems, monitoring and testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the planning of analytical processes, establishment of evaluative (success) criteria, preparation and layout of the worksite and the obtaining of testing equipment and materials to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate and establish testing equipment and present analytical results.
- establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.
- use the workplace technology related to systems analysis and diagnosis, information research and management systems, testing equipment, maintenance

REQUIRED SKILLS AND KNOWLEDGE
equipment, tooling, calculators and measuring devices.
Required knowledge
• in depth knowledge of air conditioning and heating principles. • general knowledge of the concepts, principles and processes involved in planning and implementing systems analysis and evaluation. • basic mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems. • general knowledge of the types, functions and operations of climate control systems. • general knowledge of the theory of diagnosis, including concept, design and planning. • general knowledge of the concepts, types, functions, operations and limitations of electro mechanical and fluid sub-systems within climate control systems. • detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetics, inductance, discrete electronic components, logic families and radio frequency. • detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment. • general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations. • general knowledge of personal computer operation.

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Interpret work order and locate and apply information. • Apply safety requirements, including the isolation of equipment and use of personal protective equipment. • Follow work instructions, operating procedures and inspection processes to: • minimise the risk of injury to self and others

EVIDENCE GUIDE	
	• prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Complete failure analyses on a minimum of three different climate control systems with real or simulated multi-system and intermittent faults and identify, evaluate, select and document the most appropriate rectification measure. • Analyse and validate or recommend variations to a minimum of two available repair/modification procedures for different climate control systems. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to a requirement and objective(s) for analysis and evaluation, operational climate control systems with real or simulated faults, monitoring processes and testing equipment appropriate to the objective(s), research facilities and technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other circumstances. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Failure analysis and evaluation process	The objective of the failure analysis and evaluation process may be to determine fault rectification measures, to effect variation in system characteristics and parameters or to enhance system performance.
Climate control systems	Climate control systems are systems controlled by digital computer to maintain the in-cabin temperature selected by the operator, independent of the influence of external climatics. It includes air conditioning, heating, blending systems and multi-class bus systems.
Climate control systems electrical and electronic failures	Climate control systems electrical and electronic failures covered by this unit are to include direct faults in input sensors, output actuators, wiring harness, computer systems, calibration/adjustment specifications, component specifications, component assembly, component damage and system modifications.
Climate control systems failures	Climate control systems failures covered by this unit are to include indirect faults caused by the influence of external systems (electrical and electronic) which may or may not be faulty in their primary operations.
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and

RANGE STATEMENT	
	problem-solving skills in the diagnosis of faults.
Evaluative criteria	Evaluative criteria, sometimes referred to as success factors, detail the criteria against which the achievement of the objectives of the analysis are to be judged. They are to include statistically based criteria and may include other measures.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards and are to include the disarming of supplementary restraint systems (SRS) by manufacturer/ component supplier specifications.
Testing equipment	Testing equipment is to include pressure gauges, charge stations, reclaim units, recycling units, leak detectors, thermometers, flushing equipment, multimeters, data scanners, test lights and test LEDs, and may include lab oscilloscopes and manufacturer/component supplier testing equipment.
Tests	Tests to be conducted are to include wiring and connector integrity, operation and specification of input and output devices, controlling electronic components and computers, data interpretation and readings related to direct, indirect and intermittent causes.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to climate control systems. • Australian Design Rules. • Vehicle industry regulations.

RANGE STATEMENT

	Vehicle industry publications related to climate control system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT576520A Develop and apply electrical systems modification

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to develop, apply and validate significant modifications to existing electrical systems in order to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	This includes the preparation and application of specifications and processes complying with safety, legal and commercial obligations.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the modification requirement	1.1.OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.2.Purpose and objectives of the modification are identified from an analysis of inputs and confirmed with the customer. 1.3.Outline options for achieving the required purpose and objectives are identified, framed and presented to the customer prior to proceeding. 1.4.Possible legal and safety impacts of the modification are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Develop and validate the modification specification	2.1.Benchmark specifications for the existing electrical system are accessed and interpreted. 2.2.Criteria to be used in the selection of the modification method and in the evaluation of the outcomes are identified and documented. 2.3.Proposed modification method is selected following the identification, consideration and evaluation of the full range of available and relevant options. 2.4.Selected option, including material choices and processes, is developed in detail and progressively validated against the established criteria. 2.5.Modification specification is documented to industry and enterprise standards.
3. Apply and test the modification	3.1.Selected modification method and process is followed in accordance with the established

ELEMENT	PERFORMANCE CRITERIA
specification	specifications. 3.2.Modification is completed using equipment, tooling and materials in accordance with accepted industry standards and practices. 3.3.Tests and testing equipment are applied in accordance with regulatory requirements, manufacturer/component supplier specifications and modification specification. 3.4.Test results and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes. 3.5.Variations necessitated during the modification process or as a result of testing are incorporated into the modification specification. 3.6.Information and detail related to the modification is documented and provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Clean up work area and maintain equipment	4.1.Materials that can be reused is collected and stored. 4.2.Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 4.3.Waste and scrap is removed following workplace procedures. 4.4.Unserviceable equipment is tagged and faults identified in accordance with workplace. 4.5.Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand legal and technical information related to

REQUIRED SKILLS AND KNOWLEDGE

contemporary automotive electrical systems modifications.

- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the development and planning of modification processes, preparation and layout of the worksite and the obtaining of tooling, equipment, materials and testing equipment to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate specifications, calibrate and establish testing equipment and evaluate modification results against pre-established criteria.
- establish modification methods and processes which anticipate and allow for risks and avoid or minimise reworking and avoid wastage.
- use the full range of workplace technology related to electrical systems modification, including testing equipment, maintenance equipment, tooling, calculators and measuring devices and information management systems.

Required knowledge

- electrical theory covering voltage, current, resistance, power, magnetism and inductance including semi-conductors and electronic system applications.
- electrical theory covering the concepts and principles of electrical, electronic and pneumatic systems.
- detailed knowledge of electrical theory and operation covering automotive digital computers, networked vehicles, voltage, current, resistance, power, capacitance, electrostatics, magnetism, inductance and radio frequency.
- general knowledge of the types, functions, operation and limitations of the main automotive industry electrical systems.
- general knowledge of automotive digital computing systems.
- detailed knowledge of the types, functions, operation and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting modification specifications and outcomes.

Evidence Guide**EVIDENCE GUIDE**

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Interpret work order and locate and apply information.
- Apply safety requirements, including the isolation of equipment and use of personal protective equipment.
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self and others
 - prevent damage and wastage of goods, equipment and products
 - maintain required production output and product quality.
- Modify a significant electrical system or sub-system including:
 - the selection, development and documenting of success factors and evaluation criteria before undertaking the modification
 - the selection, development and validation of the modification methodology, processes and specification
 - the application of the modification specification, methodology and process
 - the documenting and reporting of the outcomes.
- Work effectively with others.
- Modify activities to cater for variations in workplace context and environment.

Context of, and specific resources for assessment

Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines.

Access to operational electrical systems required modification, testing equipment as stipulated in the Range Statement, technical information and a work environment.

Method of assessment

Assessment of this unit of competence is most likely to be project related and require portfolios or other forms of indirect evidence of process. Direct evidence will include certification of compliance of the final outcome/product or authorisation for use by a competent authority.

Assessment must confirm the inference that competence is

EVIDENCE GUIDE

	able not only to be satisfied under the particular circumstances, but is able to be transferred to other projects. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Electrical modifications	Electrical modifications to be covered by this unit may include those to: • vary the performance of DC motors to meet changes in operational requirements • vary the performance of alternators to meet changes in operational requirements • change the electrical sequenced operating order of electric over hydraulic systems • convert vehicle from ground to insulated return.
Inputs to the modification method and processes	Inputs to the modification method and processes may be obtained from customer requirements, manufacturer/ component supplier specifications, outcomes of diagnostic processes or from regulatory, licensing, intellectual property legislation, safety requirements and Australian Design Rules.
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures.

RANGE STATEMENT	
	• Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluation criteria	• Evaluation criteria, sometimes referred to as success factors, are to be established prior to a modification being undertaken and are to cover safety, functionality, survivability, maintainability, life cycle cost and aesthetics.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards.
Tests and testing equipment	Tests and testing equipment is to include that to the modification being carried out but it should include computer-based diagnostic systems.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to electrical systems modification. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to emerging transmission system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT576620A Develop and apply electronic systems modification

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to develop, apply and validate significant modifications to existing electronic systems in order to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	This includes the preparation and application of specifications and processes complying with safety, legal and commercial obligations.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the modification requirement	1.1.OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.2.Purpose and objectives of the modification are identified from an analysis of inputs and confirmed with the customer. 1.3.Outline options for achieving the required purpose and objectives are identified, framed and presented to the customer prior to proceeding. 1.4.Possible legal and safety impacts of the modification are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Develop and validate the modification specification	2.1.Benchmark specifications for the existing electronic system are accessed and interpreted. 2.2.Criteria to be used in the selection of the modification method and in the evaluation of the outcomes are identified and documented. 2.3.Proposed modification method is selected following the identification, consideration and evaluation of the full range of available and relevant options. 2.4.Selected option, including material choices and processes, is developed in detail and progressively validated against the established criteria. 2.5.Modification specification is documented to industry and enterprise standards.
3. Apply and test the modification	3.1.Selected modification method and process is followed in accordance with the established

ELEMENT	PERFORMANCE CRITERIA
specification	specifications. 3.2.Modification is completed using equipment, tooling and materials in accordance with accepted industry standards and practices. 3.3.Tests and testing equipment are applied in accordance with regulatory requirements, manufacturer/component supplier specifications and modification specification. 3.4.Test results and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes. 3.5.Variations necessitated during the modification process or as a result of testing are incorporated into the modification specification. 3.6.Information and detail related to the modification is documented and provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Clean up work area and maintain equipment	4.1.Materials that can be reused is collected and stored. 4.2.Testing equipment and support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 4.3.Waste and scrap is removed following workplace procedures. 4.4.Unserviceable equipment is tagged and faults identified in accordance with workplace procedures. 4.5.Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand legal and technical information related to contemporary automotive electronic systems modifications.

REQUIRED SKILLS AND KNOWLEDGE

- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the development and planning of modification processes, preparation and layout of the worksite and the obtaining of tooling, equipment, materials and testing equipment to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate specifications, calibrate and establish testing equipment and evaluate modification results against pre-established criteria.
- establish modification methods and processes which anticipate and allow for risks and avoid or minimise reworking and avoid wastage.
- use the full range of workplace technology related to electronic systems modification, including testing equipment, maintenance equipment, tooling, calculators and measuring devices and information management systems.

Required knowledge

- general knowledge of the types, functions, operations and limitations of the main automotive industry electronic systems.
- general knowledge of automotive digital computing systems.
- detailed knowledge of electrical theory and operation covering, laws, theorems, dc and ac voltage and current, resistance, power, capacitance, electrostatics, electromechanics, magnetism, inductance, reactance, time constants, resonance, filtering, discrete semi-conductor electronic components, colour codes, analogue electronics, analogue IC, binary, logic families, digital IC, memory types and functions, microprocessor principles, micro-controller principles, analogue to digital conversion, signal processing, output control and characteristics, automotive digital computers, programming, networked vehicles and radio frequency.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting modification specifications and outcomes.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the

EVIDENCE GUIDE	
performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Interpret work order and locate and apply information. • Apply safety requirements, including the isolation of equipment and use of personal protective equipment. • Follow work instructions, operating procedures and inspection processes to: • minimise the risk of injury to self and others • prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Modify a significant electronic system or sub-system including: • external modification (not within the computer) to a digital computer management system enhancing the system performance • external modification (not within the computer) to a digital computer management system, utilising electronic circuit design, development, manufacture, trial, evaluation, improvement and commissioning, enhancing the system performance • internal modification (within the computer) to a digital computer management system, utilising electronic circuit design, reprogramming, development, manufacture, trial, evaluation, improvement, and commissioning enhancing the system performance. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to operational electronic systems requiring modification, testing equipment as stipulated in the Range Statement, technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related and require portfolios or other forms of indirect evidence of process. Direct evidence will include

EVIDENCE GUIDE

	certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other projects. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Electrical modifications

Electronic modifications to be covered by this unit may include computer controlled systems where the process relates to three categories:

- Modification carried out external to the computer, utilising 'off the shelf' components and modification to wiring circuitry.

Example:

- Modification to an electronic engine management system, improving the performance of an ECU controlled engine cooling fan system necessitating changes to relay circuitry.
- Modification carried out external to the computer, utilising electronic circuit design, development, manufacture, trial, evaluation, improvement, and commissioning.

RANGE STATEMENT	
	Example: • Development of an electronic control unit to delay engine crank while sounding an alarm warning of impending start of hazardous equipment. • Modification carried out internally in the computer, utilising electronic circuit design, reprogramming, development, manufacture, trial, evaluation, improvement, and commissioning. Examples are: • Rectification of an original internal computer design/operating deficiency • Modification to an electronic engine management computer, to enhance the performance of an engine • Modification to a computerised system, to disable a function no longer required by customer • Inputs to the modification method and processes may be obtained from customer requirements, manufacturer/component supplier specifications, outcomes of diagnostic processes or from regulatory, licensing, intellectual property legislation, safety requirements and Australian Design Rules
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluation criteria	Evaluation criteria, sometimes referred to as success factors, are to be established prior to a modification being undertaken and are to cover safety, functionality, survivability, maintainability

RANGE STATEMENT	
	life cycle cost and aesthetics.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards.
Equipment	Equipment is to include that appropriate to the modification being carried out, including electronic work station, desoldering station, electronic variable power supply, simulated vehicle system test facility, multimeters, lab oscilloscopes, logic probe and data scanners, and it should include computer-based diagnostic systems.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to electronic systems modification. • Australian Design Rules. • Vehicle industry regulations. • Vehicle industry publications related to emerging electronic technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT577120A Develop and apply gas fuel systems modification

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to develop, apply and validate significant modifications to existing gas fuel systems in order to sustain, vary or enhance performance.

Application of the Unit

Application of the unit	This includes the preparation and application of specifications and processes complying with safety, legal and commercial obligations.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify and confirm the modification requirement	1.1.OH&S requirements, including regulatory requirements, equipment and system isolation requirements and personal protection needs are observed throughout the work. 1.2.Purpose and objectives of the modification are identified from an analysis of inputs and confirmed with the customer. 1.3.Outline options for achieving the required purpose and objectives are identified, framed and presented to the customer prior to proceeding. 1.4.Possible legal and safety impacts of the modification are considered and responded to in accordance with regulatory and enterprise obligations and practices.
2. Develop and validate the modification specification	2.1.Benchmark specifications for the existing gas fuel system are accessed and interpreted. 2.2.Criteria to be used in the selection of the modification method and in the evaluation of the outcomes are identified and documented. 2.3.Proposed modification method is selected following the identification, consideration and evaluation of the full range of available and relevant options. 2.4.Selected option, including material choices and processes, is developed in detail and progressively validated against the established criteria. 2.5.Modification specification is documented to industry and enterprise standards.
3. Apply and test the modification	3.1.Selected modification method and process is followed in accordance with the established

ELEMENT	PERFORMANCE CRITERIA
specification	specifications. 3.2.Modification is completed using equipment, tooling and materials in accordance with accepted industry standards and practices. 3.3.Tests and testing equipment are applied in accordance with regulatory requirements, manufacturer/component supplier specifications and modification specification. 3.4.Test results and other diagnostic findings are verified, if necessary, by using reliable alternate or optional processes. 3.5.Variations necessitated during the modification process or as a result of testing are incorporated into the modification specification. 3.6.Information and detail related to the modification is documented and provided to the appropriate parties in accordance with regulatory and commercial obligations.
4. Clean up work area and maintain equipment	4.1.Materials that can be reused is collected and stored. 4.2.Testing equipment and other support materials are cleaned, maintained and prepared ready for further use or stored in accordance with manufacturer/component supplier specifications and enterprise requirements. 4.3.Waste and scrap is removed following workplace procedures. 4.4.Unserviceable equipment is tagged and faults identified in accordance with workplace procedures. 4.5.Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand legal and technical information related to

REQUIRED SKILLS AND KNOWLEDGE

contemporary gas fuel systems modifications.

- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, reporting of work outcomes and completion of regulatory, commercial and vehicle information systems inputs.
- plan and organise activities, including the development and planning of modification processes, preparation and layout of the worksite and the obtaining of tooling, equipment, materials and testing equipment to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity.
- use mathematical ideas and techniques to complete measurements, calculate specifications, calibrate and establish testing equipment and evaluate modification results against pre-established criteria.
- establish modification methods and processes which anticipate and allow for risks and avoid or minimise reworking and avoid wastage.
- use the full range of workplace technology related to gas fuel systems modification, including testing equipment, maintenance equipment, tooling, calculators and measuring devices and information management systems.

Required knowledge

- mechanical theory covering the concepts and principles of mechanical, hydraulic and pneumatic systems.
- general knowledge of the theory of diagnosis, including concept, design and planning.
- detailed knowledge of the concepts, types, functions, operations and limitations of gas fuel systems.
- detailed knowledge of the types, functions, operations and limitations of diagnostic testing equipment.
- general knowledge of the methods and processes for documenting and reporting diagnostic findings and recommendations.
- general knowledge of personal computer operation.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Interpret work order and locate and apply information. • Apply safety requirements, including the isolation of equipment and use of personal protective equipment. • Follow work instructions, operating procedures and inspection processes to: • minimise the risk of injury to self and others • prevent damage and wastage of goods, equipment and products • maintain required production output and product quality. • Modify a significant gas fuel system or sub-system including: • selection, development and documenting of success factors and evaluation criteria before undertaking the modification • selection, development and validation of the modification methodology, processes and specification • application of modification specification, methodology and process • the documenting and reporting of the outcomes. • Work effectively with others. • Modify activities to cater for variations in workplace context and environment.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated facility with process equipment, materials, work instructions and deadlines. Access to an operational gas fuel system requiring modification, testing equipment as stipulated in the Range Statement, technical information and a work environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related and require portfolios or other forms of indirect evidence of process. Direct evidence will include certification of compliance of the final outcome/product or authorisation for use by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other projects. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic

EVIDENCE GUIDE	
	work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Gas fuel systems modifications	Gas fuel systems modifications to be covered by this unit may include those to: • enhance engine performance • maintain emissions • meet Australian Design Rules • meet legislative requirements retrospectively.
Inputs to the modification method and processes	Inputs to the modification method and processes may be obtained from customer requirements, manufacturer/ component supplier specifications, outcomes of diagnostic processes or from regulatory, licensing, intellectual property legislation, safety requirements and Australian Design Rules.
Unit context	• OH&S requirements include legislation, vehicle industry regulations, safety management systems, hazardous substances and dangerous goods code and safe operating procedures. • Work is carried out in accordance with legislative obligations, Australian Design Rules, environmental legislation, health regulations, manual handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate

RANGE STATEMENT	
	research, analytical, judgement and problem-solving skills in the diagnosis of faults.
Evaluation criteria	Evaluation criteria, sometimes referred to as success factors, are to be established prior to a modification being undertaken and are to cover safety, functionality, survivability, maintainability, life cycle cost and aesthetics.
Isolation procedures	Equipment isolation procedures are to be to industry and enterprise standards.
Tests and testing equipment	Tests and testing equipment is to include that appropriate to the modification being carried out but it should include computer-based diagnostic systems.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to the use of tooling and equipment. • Workplace procedures relating to reporting and communication. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to gas fuel systems modification. • Australian Design Rules. • Gas fuel vehicle regulations. • Vehicle industry publications related to emerging transmission system technology and technology changes.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURT577520A Prepare technical reports

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to identify and analyse requirements, to plan and conduct research, to evaluate information and findings, and to develop, document and present technical reports.

Application of the Unit

Application of the unit	A technical report is one that researches, analyses and reports on the specifications and/or effectiveness of existing or proposed technical systems, componentry, materials and/or processes.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for the reporting requirement	1.1. Purpose or objective of the report is identified, clearly defined and confirmed with the customer or sponsor. 1.2. Project timeframe and outline plan of the main activities are prepared and confirmed with key parties. 1.3. Requirements for information entry, storage, output and quality of document production are identified in accordance with enterprise procedures.
2. Plan the research effort	2.1. Scope and nature of the information requirements are identified. 2.2. All possible sources of the required information are researched and identified. 2.3. A systematic research or information collection plan is designed to optimise the process. 2.4. Resources are obtained and scheduled to service the research requirements.
3. Conduct research	3.1. Research is undertaken effectively in accordance with the plan. 3.2. Experiments and tests to support the research effort are conducted in a manner which ensures the demonstrable integrity of the outcomes or findings.

ELEMENT	PERFORMANCE CRITERIA
	3.3. Research findings are logged, documented and stored to maintain traceability. 3.4. Preliminary analysis is conducted to identify requirements for variations or additions to the research plan.
4. Analyse the information	4.1. Information is sorted, documented and prepared for the analytical process. 4.2. Information and data is manipulated to enable reasonable comparisons and judgements. 4.3. Clarification by way of expert advice and opinion is sought. 4.4. Conclusions and findings reached are logical and based on objective analysis of the available data.
5. Prepare and present the report	5.1. Report clearly defines the objectives, process, findings and further actions. 5.2. Report addresses and satisfies the stated objective and timeframe. 5.3. Report and associated presentation materials are of a standard and quality for the intended audience. 5.4. Reader comprehension of the report is aided by use of executive summaries and attachments. 5.5. Protocols, conventions and legal requirements related to acknowledgements and intellectual property are applied. 5.6. Information management requirements, including documenting and repository actions are satisfied in accordance with enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- research, collect, organise and understand technical information related to the subject area, developmental activities, testing processes, diagnostic methods and options and safety procedures.
- communicate ideas and information to ensure the completeness, clarity and

REQUIRED SKILLS AND KNOWLEDGE

- comprehension of the technical report by the target audience.
- plan and organise the research and writing effort to avoid backtracking, workflow interruptions or wastage.
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise research and writing.
- use mathematical ideas and techniques to incorporate calculation, measurements, calibration and test requirements into research and validation activities.
- establish processes which anticipate and allow for risks, cater for both direct and indirect causes, avoid or minimise reworking and avoid wastage in the research and report preparation activities.
- use the workplace technology related to document preparation, including computing systems and information management systems, calculators and measuring devices.

Required knowledge

- technical writing and presentation techniques.
- enterprise (or equivalent) technical procedure formats, content rules, preparation and management techniques.

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

- Locate, interpret and apply information.
- Apply safety requirements throughout the work sequence, including the use of personal protective clothing and equipment.
- Identify and itemise steps and stages covering confirmation of objective, research planning and conduct and report preparation.
- Complete a significant technical report covering:
 - detailed research of the topic area
 - a full analysis of the research outcomes
 - conclusions and recommendations clearly supported

EVIDENCE GUIDE	
	by the facts • satisfaction of legal, regulatory or intellectual property law requirements. • Modify activities to cater for variations in research findings. • Work effectively with others.
Context of, and specific resources for assessment	Assessment may occur on the job or in a workplace simulated activity. Access to a significant technical research and reporting requirement, information sources and a working environment.
Method of assessment	Assessment of this unit of competence is most likely to be project related and require portfolios or other forms of indirect evidence of process. Direct evidence will include acceptance of the final outcome/report by a competent authority. Assessment must confirm the inference that competence is able not only to be satisfied under the particular circumstances, but is able to be transferred to other projects. Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Unit context	• OH&S requirements include legislation, safety management systems, hazardous substances and dangerous goods codes and safe operating procedures.

RANGE STATEMENT	
	• Work is carried out in accordance with legislative obligations, environmental legislation, health regulations, authorised handling procedures and organisation insurance requirements. • Work requires individuals to demonstrate conceptual ability, discretion, judgement and problem-solving skills.
Workplace environment	Work may involve individual and team related activities. Work may be carried out in a commercial, workshop, laboratory or research establishment.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices.
Information and procedures	• Workplace procedures relating to reporting and communication. • Vehicle industry publications related to emerging system technology and technology changes. • Professional publications. • Automotive research collections and access facilities. • Manufacturer/component supplier specifications and application procedures for testing equipment and materials. • Manufacturer/component supplier specifications, schematics and operational procedures related to systems. • Australian Standards. • Australian Design Rules. • Vehicle industry regulations.

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

AURTH316166A Repair suspension systems (heavy vehicle)

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to carry out the repairs to suspension systems and associated components.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirement, preparation for work, inspections/testing and analysis of outcomes and completion of repair actions and work finalisation processes, including clean-up and documentation. This unit of competence should be contextualised to the qualification to which it is being applied. Work involves wheeled vehicles, including chain drive and tracked type vehicles. Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to undertake repairs to suspension systems and associated components	1.1. Nature and scope of work requirements are identified and confirmed 1.2. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 1.3. Procedures and information such as workshop manuals and specifications, and tooling, are sourced 1.4. Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5. Technical and/or measurement requirements for suspension systems are sourced and support equipment is identified and prepared 1.6. Warnings in relation to working with wheeled and tracked vehicles are observed

ELEMENT	PERFORMANCE CRITERIA
2. Conduct inspection/test and analysis	2.1.Methods for inspection/test procedures and manufacturer/ component supplier specifications 2.2.Inspection/test results are compared with manufacturer/ component supplier specifications to indicate compliance or non-compliance 2.3.Results are documented with evidence and supporting information and recommendation(s) made 2.4.Report is forwarded to persons for action in accordance with workplace procedures
3. Carry out repairs	3.1.OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 3.2.Procedures and information are identified and sourced 3.3.Technical and tool requirements for repair are identified and support equipment is identified and prepared 3.4.Methods for repair are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 3.5.Adjustments made during the repair are in accordance with manufacturer/component supplier specifications
4. Prepare vehicle for use or storage	4.1.Repair schedule documentation is completed 4.2.Final inspection is made to ensure protective guards, safety features and cowlings are in place 4.3.Final inspection is made to ensure work is to workplace expectations 4.4.Vehicle/equipment is cleaned for use or storage to workplace expectations 4.5.Job card is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures
- apply analytical skills for identification and analysis of technical information
- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining information from customers
- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to own work activities, including making good use of time and resources, sorting out priorities and monitoring own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use mathematical ideas and techniques to correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology, including the use of measuring equipment, computerised technology and communication devices and the documenting/recording of results

Required knowledge

A working knowledge of:

- OH&S and environmental regulations/requirements, equipment, material and personal safety requirements
- dangers of working with equipment on chassis
- types and layout of service/repair manuals (hard copy and electronic)
- repair procedures
- enterprise quality procedures
- work organisation and planning processes

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of: • observing safety procedures and requirements • communicating effectively with others involved in or affected by the work • selecting methods and techniques appropriate to the circumstances • completing preparatory activity in a systematic manner • interpreting inspection/test results • conducting repair of a range of systems in accordance with manufacturer/component supplier and workplace requirements • completing repairs within workplace timeframes • vehicle/equipment presentation to customer in compliance with workplace requirements
Context of, and specific resources for assessment	Application of competence is to be assessed in the workplace or simulated worksite Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints Assessment is to comply with regulatory requirements, including Australian Standards The following resources should be made available: • workplace location or simulated workplace • material relevant to the repair of suspensions systems • equipment, hand and power tooling appropriate to the repair of suspensions systems • activities covering mandatory task requirements • specifications and work instructions
Method of assessment	Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training

EVIDENCE GUIDE

	Package Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies Assessment may be applied under project related conditions and require evidence of process Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other persons subject to agreed authentication arrangements Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
Guidance information for assessment	

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Suspension systems

- Suspension systems may be gas, hydraulic, pneumatic, mechanical or rubber suspension
- Suspension systems may include:

RANGE STATEMENT	
	• lateral and longitudinal arms, independent suspension • ball joints • self-levelling device, ride control, height control
Repair methods	Methods are to include: • functional testing, pressure testing, electrical testing • visual, aural and functional assessments (including: damage, corrosion, fluid levels, fluid leaks, air leaks, wear, alignment) • adjustment of shock absorbers • accumulators
OH&S	OH&S requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and

RANGE STATEMENT	
	clean-up management
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include hand tooling, meters, gauges, load testing devices, computerised diagnostic equipment and shock absorber testers
Materials	Materials may include spare parts, lubricants, fluids and cleaning materials
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault documenting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to the repair of suspension systems • regulatory/legislative requirements pertaining to automotive industry, including Australian Design Rules • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian Standards

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	

BSBCMM101A Apply basic communication skills

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to develop communication skills in the workplace. It covers gathering, conveying and receiving information, along with completing assigned written information under direct supervision. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals developing basic skills and knowledge of workplace communication in preparation for working in a broad range of settings.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify workplace communication procedures	1.1. Identify organisational communication requirements and <i>workplace procedures</i> with assistance from <i>appropriate people</i> 1.2. Identify appropriate <i>lines of communication</i> with supervisors and colleagues 1.3. Seek advice on the <i>communication method/equipment</i> most appropriate for the task
2. Communicate in the workplace	2.1. Use effective questioning, and active listening and speaking skills to gather and convey information 2.2. Use appropriate non-verbal behaviour at all times 2.3. Encourage, acknowledge and act upon constructive feedback
3. Draft written information	3.1. Identify relevant procedures and formats for written information 3.2. Draft and present assigned <i>written information</i> for approval, ensuring it is written clearly, concisely and within designated timeframes 3.3. Ensure written information meets required <i>standards</i> of style, format and detail 3.4. Seek assistance and/or feedback to aid communication skills development

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to identify lines of communication, to request advice, to effectively question, to follow instructions, to receive feedback, and to convey messages clearly and concisely
- culturally appropriate communication skills to relate to people from diverse backgrounds and to people with diverse abilities
- literacy skills to identify work requirements, to draft written information and to process basic, relevant workplace documentation
- problem-solving skills to solve routine problems related to the workplace, under direct supervision.

Required knowledge

- key provisions of relevant legislation from all forms of government that may affect aspects of business operations, such as privacy laws
- organisational policies, plans and procedures.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- clear, concise and correct verbal and written communication
- promptly and appropriately following instructions
- knowledge of relevant legislation.

Context of and specific resources for assessment

Assessment must ensure:

- access to an actual workplace or simulated environment
- access to office equipment and resources
- access to examples of documents relating to

EVIDENCE GUIDE	
	workplace communication policies and procedures.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • analysis of responses to case studies and scenarios • demonstration of techniques • observation of presentations • oral or written questioning to assess knowledge of organisational policies, plans and procedures • review of written information.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • general administration units.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
<i>Workplace procedures</i> may include:	• answering telephone calls • following instructions • informal discussions • requests from colleagues • using internet and email • using voice mail • workplace procedures related to specific tasks
<i>Appropriate people</i> may include:	• colleagues • other staff members • supervisors, mentors, trainers or assessors

RANGE STATEMENT	
Lines of communication may include:	• formal and informal means • verbal or written
Communication method/equipment may include:	• computer network systems • facsimile machines • personal computer equipment including hardware, keyboards, software and communication packages • telephones
Written information may include:	• electronic mail • facsimiles • general correspondence or standard/form letters and memos • handwritten and printed materials • telephone messages or general messages
Standards may include:	• organisational policies • standards set by workgroup

Unit Sector(s)

Unit sector	

Competency field

Competency field	Communication - Interpersonal Communication

Co-requisite units

Co-requisite units		

BSBCMN311B Maintain workplace safety

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is concerned with OHS responsibilities of employees with supervisory responsibilities to implement and monitor the organisation's Occupational Health and Safety policies, procedures and programs in a small team to meet legislative requirements. This unit has been adapted from Generic Competency B in the National Guidelines for Integrating Occupational Health and Safety Competencies into National Industry Competency Standards [NOHSC:7025 (1998) 2nd edition].

Application of the Unit

Application of the unit	Frontline managers have a key role in maintaining workplace safety within the context of the organisation. In their role, they closely monitor aspects of work associated with the safe delivery of products and services, meaning that they have an important responsibility in influencing the ongoing safety within the workplace. At this level, work will normally be carried out within known routines, methods and procedures, and may also involve a number of complex or non routine activities that require some discretion and judgement.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assist incorporation of Occupational Health and Safety policy and procedures into the work team	1.1. Demonstrate basic requirements of <i>Occupational Health and Safety legislation</i> in area of responsibility appropriate for health and safety needs of a small work team 1.2. Provide information and clearly explain to the work group the <i>organisation's Occupational Health and Safety policies, procedures and programs</i> 1.3. Regularly provide information and clearly explain to the work group information about <i>identifying hazards</i> and the outcomes of <i>risk assessment</i>
2. Support participative arrangements for the management of Occupational Health and Safety	2.1. Implement and monitor <i>organisational consultative procedures</i> to facilitate participation of work group in management of work area hazards 2.2. Promptly dealt with issues raised through consultation in accordance with organisational

ELEMENT	PERFORMANCE CRITERIA
	procedures for issue resolution 2.3. Encourage and assist team members to contribute to the management of Occupational Health and Safety at the workplace 2.4. Engage with individuals and teams to identify and implement improvements in the management of Occupational Health and Safety Feedback
3. Support the organisation's procedures for providing Occupational Health and Safety training	3.1. Provide advice on Occupational Health and Safety training needs of individuals and workgroup 3.2. Provide advice on strategies and opportunities for development of workgroup's competencies in relation to Occupational Health and Safety 3.3. Provide coaching and mentoring assistance to team members to support the effective development of individual and group competencies in Occupational Health and Safety
4. Participate in identifying hazards and assessing and controlling risks for the work area	4.1. Provide advice on hazards in work area in line with organisation's Occupational Health and Safety policies and procedures 4.2. Support the implementation of procedures to control risks using the hierarchy of controls and in accordance with organisational procedures 4.3. Identify and reported inadequacies in existing risk control measures are in accordance with the hierarchy of controls 4.4. Accurately complete and maintain Occupational Health and Safety records of incidents in the work area are in accordance with Occupational Health and Safety legal requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- literacy skills to understand workplace procedures and work instructions for identifying and reporting hazards and interpreting Occupational Health and Safety signs and symbols

REQUIRED SKILLS AND KNOWLEDGE

- analytical skills to identify hazards and assess risks in the work area
- data analysis skills including:
 - incident (accident) monitoring
 - environmental monitoring
 - evaluation of effectiveness of risk control measures
- assessment skills to assess resources required to apply risk control measures
- technology skills including the ability to operate and shut down equipment
- coaching and mentoring skills to provide support to colleagues
 - Ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities.

Required knowledge

- relevant legislation from all levels of government that affects business operation, especially in regard to Occupational Health and Safety and environmental issues, equal opportunity, industrial relations and anti-discrimination
- hazards and associated risks which exist in the workplace
- organisation policies and procedures relating to hazard management, fire, emergency, evacuation, incident (accident) investigating and reporting
- Occupational Health and Safety management to other organisational systems and procedures
- characteristics and composition of the workgroup.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- organisational management systems and procedures to Occupational Health and Safety within work group area
- Occupational Health and Safety legal and organisational requirements
- procedures for identifying hazards in the work area
- procedures for assessing and controlling risks to health&safety associated with those hazards, in

EVIDENCE GUIDE	
	accordance with the hierarchy of control • specific, clear and accurate information and advice on workplace hazards to work group • appropriate supervision of work group.
Context of and specific resources for assessment	Assessment must ensure: • access to safety processes, hazards and risk which are relevant to the area of work • access to relevant information and documentation on compliance requirements such as: • organisational policies, standard operating procedures, procedures and plans • relevant legislation, regulations, licensing requirements, codes of practice, standards • access to relevant internal and external data files • access to appropriate office equipment and resources used in the identification and rectification of OHS compliance breaches.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party reports of on-the-job performance by the candidate • review of documents on workplace OHS legislation, codes, standards, policies and procedures relevant developed and communicated to employees • analysis of responses to case studies and scenarios • demonstration of the application of OHS legislation in conducting work safely • oral or written questioning to assess knowledge of research and data collection methods to obtain evidence of compliance with OHS legislation • assessment of duty of care arrangements.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Occupational Health and Safety legislation may include:

- legislation relevant to the workplace, occupation and industry, for example, mining safety, electrical legislation
- relevant commonwealth and state/territory OHS specific acts and regulations such as:
 - common law
 - contract law
 - criminal law
 - dangerous goods
 - environmental protection
 - equal opportunity and anti-discrimination law
 - industrial relations law
 - privacy
- workers compensation

Organisation's Occupational Health and Safety policies procedures and programs may include:

- procedures for hazard identification
- procedures for risk assessment, selection and implementation of risk control measures
- incident (accident) investigation
- OHS audits and safety inspections
- consultative arrangements for employees in work area
- hazard reporting procedures
- safe operating procedures/instructions
- use & care of personal protective equipment
- emergency & evacuation procedures
- purchasing policy & procedures
- plant & equipment maintenance & use
- hazardous substances use and storage
- dangerous goods transport & storage
- OHS arrangements for on site contractors, visitors and members of public
- first aid provision/medical practitioner contact

RANGE STATEMENT	
	& attention • site access
Identifying hazards and outcomes of risk assessment may occur through activities such as:	• workplace inspections in area of responsibility • consulting work team members • housekeeping • checking equipment before and during work • review of records, eg injury, hazardous substances including labels and Materials Safety Data Sheet register, dangerous goods storage list, training, plan and equipment maintenance, etc
Training needs relating to Occupational Health and Safety may include:	• coaching, mentoring and/or supervision • formal/informal learning programs • internal/external training provision • personal study
Organisational consultative procedures may include:	• formal and informal meetings • health and safety committees • attendance of health and safety representatives at management meetings • other committees, for example, planning and purchasing • early response to employee suggestions, requests, reports and concerns put forward to management • counselling/disciplinary processes
Coaching and mentoring assistance may include:	• explaining/clarifying • respecting the contribution of all participants and giving credit for achievements • presenting and promoting a safe workplace • problem solving • providing encouragement • providing feedback to another team member
Hazards in work area may include:	• blocked exits • slippery and uneven floors • untidy and or noisy work areas • lack of adequate storage • reliance on low order control measure (eg PPE) to reduce worker risk exposure instead of controlling the hazard itself • unguarded /poorly maintained machinery and equipment

RANGE STATEMENT	
	• unlabelled chemicals and substances • ergonomically unsuitable work stations and task design, eg. repetitive work, poor lighting/glarey surfaces, non-adjustable work surfaces & seating • internal/external threat of occupational violence and bullying
<i>Procedures to control risks</i> may include actions such as:	• application of the hierarchy of control, namely: • eliminate the risk • reduce/minimise the risk through: • engineering controls • administrative controls • personal protective equipment • regular consultation with workers

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Frontline Management

Co-requisite units

Co-requisite units		

BSBDIV301A Work effectively with diversity

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to recognise and interact productively with diversity in the workplace. It covers sensitive responses to, and interactions with, all manner of diversity that might be encountered during the course of work. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals who work in a variety of contexts, where they will be expected to interact with a diverse client and/or co worker population.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Recognise individual differences and respond appropriately	1.1. Recognise and respect <i>individual differences</i> in <i>colleagues</i> , clients and customers 1.2. Respond to differences sensitively 1.3. Ensure behaviour is consistent with <i>legislative requirements</i> and <i>enterprise guidelines</i> 1.4. Accommodate diversity using appropriate verbal and non-verbal communication
2. Work effectively with individual differences	2.1. Recognise and document knowledge, skills and experience of others in relation to team objectives 2.2. Encourage colleagues to utilise and share their specific qualities, skills or backgrounds with other team members and clients in order to enhance work outcomes 2.3. Ensure relations with customers and clients demonstrate that diversity is valued by the business

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE	
Required skills	
• culturally appropriate communication skills to relate to people from diverse backgrounds and people with diverse abilities • problem-solving and initiative skills to recognise and address own responses to difference.	
Required knowledge	
• key provisions of relevant legislation from all forms of government that may affect aspects of business operations, such as: • anti-discrimination legislation • ethical principles • codes of practice • privacy laws • occupational health and safety • major groups in the community and work environment, as defined by cultural, religious and other traditions and practices • reasonable adjustments that facilitate participation by people with a disability • value of diversity to the economy and society in terms of workforce development, Australia's place in the global economy, innovation and social justice.	

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • adjusting language and behaviour as required by interactions with diversity • awareness of diversity issues • knowledge of relevant legislation.
Context of and specific resources for assessment	Assessment must ensure: • access to an actual workplace or simulated environment • access to office equipment and resources

EVIDENCE GUIDE	
	• examples of diversity issues in the workplace • examples of documents relating to diversity policies and procedures.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • oral or written questioning to assess knowledge of sourcing support about workplace diversity • review of documentation outlining the knowledge, skills and experience of others in relation to team objectives.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • workplace effectiveness units.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
<i>Individual differences</i> may include:	• ability • age • belief systems/values • culture • expertise/experience/working styles • gender • interests • interpersonal style • language

RANGE STATEMENT	
	• mental ability • past experiences • physical characteristics • politics • race • religion • sexual orientation • thinking and learning styles
Colleagues may include:	• internal customers • junior staff • managers and supervisors • peers • stakeholders
Legislative requirements may include:	• disability discrimination legislation • human rights and equal opportunity legislation • racial and sex discrimination legislation
Enterprise guidelines may include:	• codes of conduct or ethics • diversity policies • human resources policies and procedures

Unit Sector(s)

Unit sector	

Competency field

Competency field	Workforce Development - Diversity

Co-requisite units

Co-requisite units	

Co-requisite units		

BSBINM301A Organise workplace information

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to gather, organise and apply workplace information in the context of an organisation's work processes and knowledge management systems. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals who are skilled operators and apply a broad range of competencies in various work contexts. They may exercise discretion and judgement using appropriate theoretical knowledge of information management to provide technical advice and support to a team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Collect and assess information	1.1. Access product and service information in accordance with organisational requirements 1.2. Ensure methods of collecting information are reliable and make efficient use of available time and resources 1.3. Assess information for clarity, accuracy, currency and relevance to intended tasks 1.4. Use interpersonal skills to access relevant information from teams and individuals
2. Organise information	2.1. Organise information in a format suitable for analysis, interpretation and dissemination in accordance with organisational requirements 2.2. Use appropriate technology/systems to maintain information in accordance with organisational requirements 2.3. Collate information and materials, and communicate to relevant designated persons 2.4. Identify difficulties organising and accessing information and solve collaboratively with individuals and team members 2.5. Update and store information in accordance with organisational requirements and systems
3. Review information	3.1. Actively seek feedback on clarity, accuracy and

ELEMENT	PERFORMANCE CRITERIA
needs	sufficiency of information to ensure relevance of information and system 3.2. Review the contribution of information to decision making and implement appropriate modifications to collection processes 3.3. Identify future information needs and incorporate in modifications to collection processes 3.4. Document future information needs and incorporate in modifications to reporting processes

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to classify and report information
- literacy skills to read and understand a variety of texts; and to write, edit and proofread documents to ensure clarity of meaning, accuracy and consistency of information
- problem-solving skills to deal with information which is contradictory, ambiguous, inconsistent or inadequate
- technology skills to display information in a format suitable to the target audience.

Required knowledge

- key provisions of relevant legislation from all forms of government that may affect aspects of business operations, such as:
 - anti-discrimination legislation
 - ethical principles
 - codes of practice
 - privacy laws
 - occupational health and safety (OHS)
- methods for checking validity of information and its sources
- organisational recordkeeping/filing systems, security procedures and safe recording practices
- policies and procedures relating to distribution of workplace information, and legal and ethical obligations.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • providing accurate information for defined purposes • systematic maintenance and handling of data and documents • using business technology to manage information • knowledge of relevant legislation.
Context of and specific resources for assessment	Assessment must ensure: • access to an actual workplace or simulated environment • access to office equipment and resources • examples of information documents found in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • analysis of responses to case studies and scenarios • demonstration of techniques • oral or written questioning to assess knowledge of organisational recordkeeping/filing systems • analysis of how information and materials were communicated to relevant people • review of documentation outlining future information needs.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • BSBWRT301A Write simple documents • general administration units • other information management units.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
<i>Information</i> may include:	• computer databases (e.g. library catalogue, customer records) • computer files (e.g. letters, memos and other documents) • correspondence (e.g. faxes, memos, letters, email) • financial figures • forms (e.g. insurance forms, membership forms) • invoices (e.g. from suppliers, to debtors) • personnel records (e.g. personal details, salary rates) • production targets • sales records (e.g. monthly forecasts, targets achieved)
<i>Organisational requirements</i> may include:	• code of conduct/code of ethics • information protocols • legal and organisational policies, guidelines and requirements • management and accountability channels • OHS policies, procedures and programs • procedures for updating records • quality assurance and/or procedures manuals • security and confidentiality requirements
<i>Methods of collecting information</i> may include:	• checking research provided by others • checking written material including referrals and client files • classification tools • individual research • information from other organisations • interviews with colleagues/customers

RANGE STATEMENT	
	• observation and listening • previous file records • questioning (in person or indirect) • recruitment applications and other forms
Interpersonal skills may include:	• consultation methods, techniques and protocols • networking • seeking feedback from group members to confirm understanding • summarising and paraphrasing • using appropriate body language
Format may include:	• adding headers and footers • incorporating graphics and pictures • inserting symbols • using legends • using a particular software application • using tables and charts
Technology may include:	• answering machine • computer • email • fax machine • internet/extranet/intranet • photocopier • shredder • telephone
Systems may include:	• information management systems • knowledge management systems • record management systems
Designated persons may include:	• clients • colleagues • committee • external agencies • line management • statutory bodies • supervisor
Feedback may include:	• audit documentation and reports • comments from clients and colleagues • customer satisfaction questionnaires • quality assurance data • returned goods

Unit Sector(s)

Unit sector	

Competency field

Competency field	Knowledge Management - Information Management

Co-requisite units

Co-requisite units		

BSBINM302A Utilise a knowledge management system

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to access and use a knowledge management system, to input into a knowledge management system, and to contribute to monitoring, reviewing and improving a knowledge management system and work practices. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals who apply a broad range of competencies in various work contexts. They may exercise discretion and judgement using appropriate theoretical knowledge of knowledge management to assist in increasing productivity, to improve quality or to recognise the benefits to the organisation through the improved use of knowledge. For the purpose of this unit, knowledge management is defined as the whole range of strategies, methods, activities and techniques used formally and informally by individuals and the organisation (as formalised in a knowledge management system) to identify, collect, organise, store, retrieve, analyse, share and apply knowledge to the work of the organisation.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Access and use knowledge management system	1.1. Access knowledge management system to assist with specific tasks, in line with system procedures 1.2. Administer system, in line with procedures
2. Input to knowledge management system	2.1. Gather, analyse and prepare inputs for contribution to the system, in line with procedures 2.2. Check inputs for clarity, accuracy, currency and relevance 2.3. Make inputs to system, in line with procedures 2.4. Analyse requirements of the system and ensure suggestions for improvements are provided to relevant personnel
3. Review and improve work practices	3.1. Provide feedback about the clarity, accuracy, currency and relevance of the system's output to

ELEMENT	PERFORMANCE CRITERIA
	relevant personnel 3.2. Document learning resulting from the use of the system 3.3. Improve work practices as a result of learning from the use of the system

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to classify and report information
- literacy skills to read and understand a variety of texts; and to write, edit and proofread documents to ensure clarity of meaning, accuracy and consistency of information
- problem-solving skills to deal with information which is contradictory, ambiguous, inconsistent or inadequate
- technology skills to display information in a format suitable to the target audience.

Required knowledge

- key provisions of relevant legislation from all forms of government that may affect aspects of business operations, such as:
 - anti-discrimination
 - ethical principles
 - codes of practice
 - privacy laws
 - occupational health and safety (OHS)
- organisational policies and procedures for knowledge management
- other relevant organisational policies and procedures, for example:
 - commercial confidentiality.
 - customer service
 - information management
- records management.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • making contributions to knowledge management system • records of outcomes resulting from the use of the system • knowledge of organisational policies and procedures for knowledge management.
Context of and specific resources for assessment	Assessment must ensure: • access to an actual workplace or simulated environment • access to office equipment and resources • examples of information documents found in the workplace • access to system (within privacy and confidentiality provisions).
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • review of documentation outlining learning resulting from the use of the system • analysis of responses to case studies and scenarios • demonstration of techniques.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • general administration units • other information management units.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Knowledge management system</i> may include:	- planned and implemented system - policies - procedures and practices to manage knowledge within the organisation and among relevant stakeholders - protocols
<i>Procedures</i> may include:	- accessible operating instructions - accessible user manuals - criteria established for selecting and filtering input to the system - related policies and procedures covering: - consultation, participation, communication, and written and verbal reporting - documentation - data collection, storage and retrieval - privacy and confidentiality - quality - staff, professional development, training, and coaching and mentoring - work organisation - templates for the collection of input to the system
<i>Inputs</i> may be:	- electronic - paper-based - verbal
<i>Relevant personnel</i> may include:	- managers, leaders, supervisors and coordinators - owners - staff, team members and colleagues

Unit Sector(s)

Unit sector	

Competency field

Competency field	Knowledge Management - Information Management

Co-requisite units

Co-requisite units		

BSBINN301A Promote innovation in a team environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to be an effective and pro active member of an innovative team. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies individuals who play a pro active role in demonstrating, encouraging or supporting innovation in a team environment. The individual may be a team participant or a team leader. The team may 'make itself' or be constructed by others. It may have core members and members who participate at certain times or for particular purposes. It may be permanent or temporary, or come together at different times to work on specific projects. The team could consist of a team of contractors/freelancers, permanent staff, clients and service providers, or any combination of these groups. It may operate within an organisation or across several organisations - or simply across a group of individuals. The key focus of the unit is on what makes for an innovative team, what keeps it working well, how the structure of work can make a difference and what skills and knowledge are needed to maximise opportunities for innovation. Where a greater focus on team leadership is required this unit should be combined with units such as BSBLED401A Develop teams and individuals.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Create opportunities to maximise innovation within the team	1.1. Evaluate and reflect on <i>what the team needs and wants to achieve</i> 1.2. Check out <i>information about current or potential team members' work</i> in the context of developing a more innovative team 1.3. Bring people into the team or make suggestions for team members based on what needs to be achieved and the potential for cross-fertilising ideas 1.4. Acknowledge, respect and discuss the <i>different ways that different people may contribute</i> to building or

ELEMENT	PERFORMANCE CRITERIA
	enhancing the team
2. Organise and agree effective ways of working	2.1. Jointly establish ground rules for how the team will operate 2.2. Agree and communicate responsibilities in ways that encourage and reinforce team-based innovation 2.3. Agree and share tasks and activities to ensure the best use of skills and abilities within the team 2.4. Plan and schedule activities to allow time for thinking, challenging and collaboration 2.5. Establish personal reward and stimulation as an integral part of the team's way of working
3. Support and guide colleagues	3.1. Model behaviour that supports innovation 3.2. Seek external stimuli and ideas to feed into team activities 3.3. Pro-actively share information, knowledge and experiences with other team members 3.4. Challenge and test ideas within the team in a positive and collaborative way 3.5. Pro-actively discuss and explore ideas with other team members on an ongoing basis
4. Reflect on how the team is working	4.1. De-brief and reflect on activities and on opportunities for improvement and innovation 4.2. Gather and use feedback from within and outside the team to generate discussion and debate 4.3. Discuss the challenges of being innovative in a constructive and open way 4.4. Take ideas for improvement, build them into future activities and communicate key issues to relevant colleagues 4.5. Identify, promote and celebrate successes and examples of successful innovation

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

REQUIRED SKILLS AND KNOWLEDGE

- communication skills to work collaboratively as part of a team, to provide guidance and support to others, and to participate in open and constructive discussions
- creative thinking skills to generate, explore, test and challenge ideas
- learning skills to stretch boundaries of own knowledge and skills
- literacy skills to analyse a wide range of information from varied sources
- planning and organisational skills to participate in the effective allocation of work in a team context
- problem-solving skills to work constructively to overcome issues and challenges of both a practical and conceptual nature and to make ideas become realities
- self-management skills to take a pro-active team role and to reflect on own performance in modelling and encouraging behaviour that supports innovation.

Required knowledge

- barriers to innovation that can occur within a team and broader barriers that sometimes hinder innovation
- broad concepts of innovation including what innovation is, different types of innovation and the benefits of innovation
- characteristics of teams that are more likely to be innovative and characteristics of broader environments that support and encourage innovation
- different roles that people may play within a team, how this impacts on the way a team works and what it might achieve
- group dynamics in a team.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- active participation in a team where the team takes a pro-active and considered approach to innovation and innovative practice
- collaborative and open communication within the team
- knowledge and understanding of the internal and external factors that contribute to a team becoming

EVIDENCE GUIDE	
	and remaining innovative.
Context of and specific resources for assessment	Assessment must ensure: demonstration of skills as part of a team.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate - direct observation of team interactions - evaluation of reports by the candidate or the team (could be oral or written) discussing the ideas, challenges and opportunities associated with teams, and how they can be more innovative - evaluation of feedback from other people in the team about the candidate's communication approaches and abilities - oral or written questioning to assess knowledge of the characteristics of innovative teams, innovation concepts more broadly and they ways in which innovation can be encouraged - review of jointly established 'groundrules' for how the team will operate.
Guidance information for assessment	Innovation does not occur in isolation. Holistic assessment with other units relevant to the industry sector, workplace and job role is highly recommended.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
<i>What the team needs and wants to achieve</i> may relate to:	- addressing particular customer feedback - conceiving and implementing a particular

RANGE STATEMENT	
	- project - developing new services or products - generating ongoing ideas within the work unit - improving budgetary performance - improving or changing work conditions - new ideas that impact beyond the workplace (e.g. that have a broader social or community impact)
Information about current or potential team members' work may relate to:	- interests - lifestyle preferences - past jobs - technical strengths - work preferences - working styles
Different ways that different people may contribute may relate to individual strengths around:	- creating positive energy within the team - fundamental literacy strengths (e.g. particularly strong in visual literacy, written or spoken communication) - generating ideas - networks or spheres of influence - particular ways of thinking - powers of persuasion - problem-solving capacities - specific technical skills or knowledge
Ground rules may relate to:	- boundaries or lack of boundaries for team activities and ideas - confidentiality - copyright, moral rights or intellectual property - regularity of communication - key roles and responsibilities - time lines - ways of communicating
Team-based innovation may be encouraged through:	- accessing training and learning opportunities - enough but not too much guidance and structure - equitable sharing of workload - follow-through with ideas - supportive communication
Behaviour that supports innovation may include being:	- collaborative - equitable

RANGE STATEMENT	
	• fair • fun • hardworking • reflective • responsible • sympathetic
<i>External stimuli and ideas</i> might be from:	• Australia or overseas • colleagues outside of the team • family and friends • internet • journals • networks or technical experts • other organisations
<i>Challenges of being innovative</i> may relate to:	• budgetary or other resource constraints • competing priorities • organisational culture • problems with breaking old patterns of behaviour or thinking • time pressures

Unit Sector(s)

Unit sector	

Competency field

Competency field	Creativity and Innovation - Innovation

Co-requisite units

Co-requisite units		

Co-requisite units		

BSBLED401A Develop teams and individuals

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to determine individual and team development needs and to facilitate the development of the workgroup. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals with a broad knowledge of learning and development who apply their skills in addressing development needs to meet team objectives. They may have responsibility to provide guidance or to delegate aspects of tasks to others.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine development needs	1.1. Systematically identify and implement <i>learning and development needs</i> in line with <i>organisational requirements</i> 1.2. Ensure that a learning plan to meet individual and group training and development needs is collaboratively developed, agreed to and implemented 1.3. Encourage individuals to self-evaluate performance and identify areas for improvement 1.4. Collect <i>feedback on performance</i> of team members from relevant sources and compare with established team learning needs
2. Develop individuals and teams	2.1. Identify learning and development program goals and objectives, ensuring a match to the specific knowledge and skill requirements of competency standards relevant to the industry 2.2. Ensure that <i>learning delivery methods</i> are appropriate to the learning goals, the learning style of participants, and availability of <i>equipment and resources</i> 2.3. Provide workplace learning opportunities, and <i>coaching and mentoring assistance</i> to facilitate individual and team achievement of competencies 2.4. Create development opportunities that incorporates a

ELEMENT	PERFORMANCE CRITERIA
	range of activities and support materials appropriate to the achievement of identified competencies 2.5. Identify and approve resources and time lines required for learning activities in accordance with organisational requirements
3. Monitor and evaluate workplace learning	3.1. Use feedback from individuals or teams to identify and implement improvements in future learning arrangements 3.2. Assess and record outcomes and performance of individuals/teams to determine the effectiveness of development programs and the extent of additional development support 3.3. Negotiate modifications to learning plans to improve the efficiency and effectiveness of learning 3.4. Document and maintain records and reports of competency according to organisational requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to receive and report on feedback, to maintain effective relationships and to manage conflict
- culturally appropriate communication skills to relate to people from diverse backgrounds and people with diverse abilities
- leadership skills to gain trust and confidence of clients and colleagues
- literacy skills to read, write and understand a variety of texts; and to edit and proofread documents to ensure clarity of meaning, accuracy and consistency of information
- negotiation skills to achieve mutually acceptable outcomes
- technology skills to support effective communication and presentation.

Required knowledge

- key provisions of relevant legislation from all levels of government that may affect aspects of business operations, such as:
 - anti-discrimination legislation
 - ethical principles

REQUIRED SKILLS AND KNOWLEDGE

- codes of practice
- privacy laws
- occupational health and safety (OHS)
- facilitation techniques to encourage team development and improvement
- organisational policies, plans and procedures
- career paths and competency standards relevant to the industry.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- identifying and implementing learning opportunities for others
- giving and receiving feedback from team members to encourage participation in and effectiveness of team
- creating learning plans to match skill needs
- knowledge of relevant legislation.

Context of and specific resources for assessment

Assessment must ensure:

- access to an actual workplace or simulated environment
- access to office equipment and resources
- examples of learning and development plans, policies and procedures
- examples of documents relating to diversity policies and procedures.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
- analysis of responses to case studies and scenarios

EVIDENCE GUIDE	
	- oral or written questioning to assess knowledge of career paths and competency standards relevant to the industry - review of records and reports of competency.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: - management units - other learning and development units.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
<i>Learning and development needs</i> may include:	- career planning/development - coaching, mentoring and/or supervision - formal/informal learning programs - internal/external training provision - performance appraisals - personal study - recognition of current competence/skills recognition - work experience/exchange/opportunities - workplace skills assessment
<i>Organisational requirements</i> may include:	- access and equity principles and practices - anti-discrimination and related policy - business and performance plans - confidentiality and security requirements - defined resource parameters - ethical standards - goals, objectives, plans, systems and processes - legal and organisational policies, guidelines and requirements

RANGE STATEMENT	
	• OHS policies, procedures and programs • quality and continuous improvement processes and standards • quality assurance and/or procedures manuals
Feedback on performance may include:	• formal/informal performance appraisals • obtaining feedback from clients • obtaining feedback from supervisors and colleagues • personal, reflective behaviour strategies • routine organisational methods for monitoring service delivery
Learning delivery methods may include:	• conference and seminar attendance • formal course participation • induction • involvement in professional networks • on-the-job coaching or mentoring • presentations/demonstrations • problem-solving • work experience
Equipment and resources may include:	• facilities • funding • guest speakers • technological tools and equipment • time • training equipment such as whiteboards and audio-visual equipment
Coaching and mentoring assistance may include:	• fair and ethical practice • non-discriminatory processes and activities • presenting and promoting a positive image of the collective group • problem-solving • providing encouragement • providing feedback to another team member • respecting the contribution of all participants and giving credit for achievements

Unit Sector(s)

Unit sector	

Competency field

Competency field	Workforce Development - Learning and Development

Co-requisite units

Co-requisite units		

BSBOHS501B Participate in the coordination and maintenance of a systematic approach to managing OHS

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to effectively participate in the coordination and maintenance of a systematic approach to managing occupational health and safety (OHS) in the workplace. It includes strategies, policies and procedures necessary to systematically manage OHS and its evaluation to ensure that the workplace is, as far as is practicable, safe and without risks to the health of employees and others. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals with managerial responsibility for coordinating and maintaining an OHS program. It involves identifying the need for change, planning and implementing strategies, integrating OHS within other functional areas, and some evaluation of the OHS management function. The unit may be undertaken in the context of an OHS management system (OHSMS) or other systematic approaches to managing OHS.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Contribute to the strategic planning process	1.1. Take steps to ensure that managers at all levels are aware of their OHS responsibilities and the role of OHS in the overall management approach 1.2. Determine OHS needs and priorities in consultation with relevant managers and other workplace stakeholders and key personnel 1.3. Make recommendations for inclusion of OHS performance (including positive performance indicators [PPIs]) in the organisation's business plan
2. Participate in the development of an OHS plan	2.1. Identify potential motivators among stakeholders together with potential barriers to the implementation of a systematic approach to managing OHS 2.2. Develop an OHS plan in consultation with

ELEMENT	PERFORMANCE CRITERIA
	workplace stakeholders, based on agreed priorities and with measurable outcomes 2.3. Identify resources required for implementation of the OHS plan 2.4. Develop action plans with relevant responsibilities and time lines 2.5. Communicate action plans to key personnel
3. Support the implementation of the systematic approach to managing OHS	3.1. Apply knowledge of OHS management and OHS disciplines in consultation with stakeholders, OHS specialists and technical advisors, to the development of policies and procedures 3.2. Provide support to managers to meet OHS responsibilities and to implement action plans 3.3. Develop strategies to effectively integrate OHS within other functional areas and management systems that impact on the management of OHS 3.4. Identify OHS training needs and formulate recommendations for delivery
4. Provide advice to key personnel and stakeholders	4.1. Provide objective advice in an ethical and non-discriminating manner 4.2. Identify situations where OHS specialists may be required
5. Participate in monitoring OHS	5.1. Identify implications for the management of OHS and proposed changes to the workplace in consultation with stakeholders 5.2. Identify implications for the management of OHS, external changes and changes to available information and data in consultation with stakeholders 5.3. Access sources of workplace information and data as part of regular monitoring of OHS 5.4. Monitor achievement against action plans and update plans as appropriate 5.5. Take action to update systematic approaches to manage OHS, taking into account proposed changes
6. Participate in reviewing the management of OHS	6.1. Regularly review the effectiveness of systematic approaches to managing OHS 6.2. Determine frequency, method and scope of review in consultation with stakeholders 6.3. Provide stakeholders with input to the review 6.4. Identify targets for improvement in the management

ELEMENT	PERFORMANCE CRITERIA
	of OHS and make recommendations for improvement 6.5. Communicate to appropriate levels of authority through planning, documentation and implementation, improvement strategies arising from the review

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to:
 - identify areas for OHS improvement
 - analyse relevant workplace information and data, and make observations of workplace tasks and interactions between people, their activities, equipment, environment and systems
 - contribute to the assessment of the resources needed to systematically manage OHS and, where appropriate, access resources
- numeracy skills to carry out simple arithmetical calculations (e.g. % change), and to produce graphs of workplace information and data to identify trends and recognise limitations
- communication skills to:
 - conduct effective formal and informal meetings and to communicate effectively with personnel at all levels of the organisation, OHS specialists and, as required, emergency services personnel
 - prepare reports for a range of target groups including OHS committee, OHS representatives, managers and supervisors
- consultation and negotiation skills to develop plans, and to implement and monitor designated actions
- project management skills to achieve change in OHS matters
- organisational skills to manage own tasks within a timeframe
- information technology skills to access internal and external information and data on OHS.

Required knowledge

- legislative requirements for OHS information and data, and consultation
- roles and responsibilities in relation to communication and consultation for OHS

REQUIRED SKILLS AND KNOWLEDGE

- committees, OHS representatives, line management, employees and inspectors
- requirements for record keeping that addresses OHS, privacy and other legislation
- state/territory and commonwealth OHS legislation (acts, regulations, codes of practice, associated standards and guidance material) including prescriptive and performance approaches and links to other relevant legislation such as industrial relations, equal employment opportunity, workers compensation, rehabilitation
- roles and responsibilities under OHS legislation of employees, including supervisors and contractors
- structure and forms of legislation including regulations, codes of practice, associated standards and guidance material
- difference between common law and statutory law
- concept of common law duty of care
- facilitation of the use of tools such as PPIs in assessment of OHS performance
- nature of information and data that provides valid and reliable results on performance of OHS management processes (including positive indicators, such as number of safety audits conducted)
- requirements for reporting under OHS and other relevant legislation including notification and reporting of incidents
- hierarchy of control and considerations for choosing between different control measures, such as possible inadequacies of particular control measures
- other functional areas that impact on the management of OHS
- auditing methods and techniques
- how the characteristics and composition of the workforce impact on risk and the systematic approach to managing OHS, for example:
 - labour market changes
 - structure and organisation of workforce e.g. part-time, casual and contract workers, shift rosters, geographical location
 - language, literacy and numeracy
 - communication skills
 - cultural background/workplace diversity
 - gender
 - workers with specific needs.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

EVIDENCE GUIDE	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • participation in organisational coordination and maintenance of OHS and associated systematic approaches • knowledge of relevant OHS legislation (acts, regulations, codes of practice, associated standards and guidance material).
Context of and specific resources for assessment	Assessment must ensure: • access to office equipment, resources and workplace documentation • access to relevant legislation, standards and guidelines.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • assessment of written reports on the effectiveness of the OHS management system • demonstration of techniques used to implement and maintain systematic OHS approaches • direct questioning combined with review of portfolios of evidence and third party reports of on-the-job performance by the candidate • observation of performance in role plays • observation of presentations • oral or written questioning to assess knowledge of the requirements for record keeping that addresses OHS, privacy and other legislation • evaluation of OHS needs and priorities • review of OHS plan and actions plans • review of OHS training needs and recommendations for delivery • monitoring of achievement against action plans and updating of plans.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • BSBOHS601B Develop a systematic approach to

EVIDENCE GUIDE

managing OHS.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Stakeholders may include:

- employees
- health and safety, and other employee representatives
- managers
- OHS committees
- supervisors

Key personnel may include:

- managers from other areas
- people involved in OHS decision making or who are likely to be impacted by decisions relating to OHS

Positive performance indicators may include:

- data, facts or statistics which demonstrate how successfully a workplace is performing through measuring OHS processes

Motivators may include:

- factors that make stakeholders likely to adopt OHS processes

Barriers to the implementation of a systematic approach to managing OHS may include:

- barriers to communication, such as language/literacy
- diversity of workers
- structural factors, such as multiple locations, shift work and supervisory arrangements
- workplace culture issues, such as management commitment, supervisors' approach to compliance and acceptance of the priority of safety

A systemic approach to managing OHS may include:

- 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:

RANGE STATEMENT	
	• allocation of resources • communication and consultation • hazard management • planning • record keeping and reporting • review and evaluation for ongoing improvement • training and competency
OHS plan may include:	• a document that is usually developed annually but may be developed for a shorter or longer period and reviewed regularly • OHS performance indicators (i.e. objectives and targets that are achievable and practical) reflecting systematic approaches to managing OHS
Resources may include:	• financial requirement for implementation • personnel, including time allocation • equipment • specialised resources • access to other resources such as: • OHS publications • OHS internal sites • industry-specific information
OHS specialists may include:	• ergonomists • injury management advisors • occupational health professionals • occupational hygienists
Technical advisors may include:	• engineers (such as design, acoustic, safety, mechanical and civil) • legal practitioners • maintenance and trades persons • workplace assessors and trainers
Policies and procedures may include:	• documents describing how tasks, projects, inspections, jobs and processes are to be undertaken • job/task statements • policies and procedures underpinning the management of OHS • purchasing and contracting procedures • quality system documentation

RANGE STATEMENT	
	• standard operating procedures
Other functional areas and management systems may include:	• engineering and maintenance • environmental management • finance and auditing • human resources, industrial relations and personnel management including payroll • information, data and records management • logistics • purchasing, procurement and contracting • quality management • strategic planning
Ethical advice may include:	• advice provided with the prime aim of reduction of workplace injury and ill health
Proposed changes to the workplace may include:	• changes to management practices • changes to work processes, work systems, work organisation, work practices and conditions • design of workplace • design or purchase of new plant or equipment • materials purchases
External changes may include:	• changes to legislation • new information and data available on OHS
Sources of workplace information and data may include:	• audits • hazard, incident and investigation reports • material safety data sheets (MSDSs) and registers • minutes of meetings • questionnaire information and data • reports - including those from external consultants • workplace inspections

Unit Sector(s)

Unit sector	

Competency field

Competency field	Regulation, Licensing and Risk - Occupational Health and Safety

Co-requisite units

Co-requisite units		

BSBPMG403A Apply cost management techniques

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to work with others to produce a project budget, to monitor project expenditure and to contribute to cost finalisation processes. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to a project team member working under the direction of a project manager with other project team members. The individual may be operating within an organisation or as a consultant. The skills should be applied in the context of multiple complex projects, with the individual operating as part of a specialist project management team. In the context of this unit a complex project is defined as a project which involves: • the need for a comprehensive and multi faceted project plan • the need for a formal internal or external communications strategy • a dedicated and diverse project budget • multiple administrative components • multiple operational components • a wide range of stakeholders • a project operations team. The functions performed by a worker managing a straightforward project or a section of a larger project where project management is not the main focus of the job

	role are covered by BSBPMG510A Manage projects.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assist with the development of the project budget	1.1. Determine <i>estimated costs</i> for tasks and activities and communicate these costs to <i>others</i> for inclusion in project budget 1.2. Map costs against duration/effort and resources allocated, and communicate to project manager for inclusion in the project plan, budget and expenditure

ELEMENT	PERFORMANCE CRITERIA
	flow 1.3. Contribute to the development of cost management strategies and processes, and financial authorisation within delegated authority
2. Monitor project costs	2.1. Monitor income and expenditure against the agreed project plan and budgets to facilitate cost management throughout the project life cycle 2.2. Use established cost management methods, techniques and tools to identify and report variations in the budget to higher project authority for action 2.3. Implement and monitor agreed actions and report progress to others to ensure cost objectives are achieved throughout the project life cycle
3. Contribute to cost finalisation process	3.1. Provide assistance in the finalisation and transfer of financial assets, liabilities and records to the client or relevant operational support agency 3.2. Provide assistance in the review of project outcomes by use of project records, to determine the effectiveness of initial and subsequent cost management strategies and processes 3.3. Report cost management issues and responses to project/program manager for application in future projects

Required Skills and Knowledge

Required skills

- numeracy skills to check and interpret project budgets
- financial management skills to develop project budgets, monitor costs and report on cost management
- technology skills to use financial management software to develop and monitor project budgets.

Required knowledge

- budgeting processes and their relationship to the project life cycle
- cost management tools and techniques.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • application of cost management techniques in relation to budgets for multiple complex projects • knowledge of cost management tools and techniques.
Context of and specific resources for assessment	Assessment must ensure: • access to examples of project management budgets and related financial documentation • access to evidence or project records of team member involvement in financial management processes.
Method of assessment	A range of assessment methods should be used to assess practical skill and knowledge. The following assessment methods are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • analysis of responses addressing different project cost management scenarios • oral or written questioning to assess knowledge of strategies for managing project costs • analysis of budgets and costing prepared by the candidate • review of communication to others of estimated costs for tasks and activities for inclusion in project budget • evaluation of reporting on cost management issues and responses to project/program manager.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Certificate IV in Project Management.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Estimated costs</i> may refer to:	• application and registration fees for intellectual property (IP) and patents etc. • contingency (as outcome of risk assessment) • facilities • labour • material • project management overheads • travel and subsistence
<i>Others</i> may include:	• higher project authority • project manager • project specialists or other personnel • team members
<i>Cost management strategies and processes</i> may include:	• communication with stakeholders, dispute resolution and modification procedures • implementation of financial control mechanisms • measurement of actual progress against planned milestones • recording and reporting of variations
<i>Delegated authority</i> means:	• conducted under limited guidance and supervision • subject to frequent change in a multi-disciplinary environment • within agreed authorisation and limits • within established organisational framework, procedures and routines
<i>Project records</i> may include:	• cost management lessons learned • cost verification and validation documentation • input to cost management plans • invoice and payment records • lists of potential costs • project and/or organisation files and records • reports to relevant stakeholders

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Project Management

Co-requisite units

Co-requisite units		

BSBPMG501A Manage application of project integrative processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to integrate and balance the overall project management functions of scope, time, cost, quality, human resources, communications, risk and procurement; and to align and track the project objectives to comply with organisational goals, strategies and objectives. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to an individual who is clearly and solely responsible for the management and leadership of a complex project, either as an employee of an organisation or as an external consultant. In the context of this unit a complex project is defined as a project which involves: • the need for a comprehensive and multi faceted project plan • the need for a formal internal or external communications strategy • a dedicated and diverse project budget • multiple administrative components • multiple operational components • a wide range of stakeholders • a project operations team. The functions performed by a program manager to manage the integration of all functions of project management in a program or multiple project are addressed in BSBPMG601A Direct the integration of projects.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Manage integration of all functions of project management	1.1. Identify project stakeholders and their interests, with guidance of higher project authority 1.2. Analyse all <i>project management functions</i> with higher project authority and relevant stakeholders to determine achievable project objectives 1.3. Develop a <i>project plan</i> to integrate all project management functions to achieve outcomes and

ELEMENT	PERFORMANCE CRITERIA
	requirements for time, cost, quality and risk 1.4. Obtain endorsement of project plan by higher project authority 1.5. Establish designated mechanisms to control planned activity
2. Coordinate internal and external environments	2.1. Manage the project within an established internal working environment to ensure work is conducted effectively throughout the project 2.2. Maintain established links to align project objectives with organisation objectives throughout the project life cycle 2.3. Seek assistance, where necessary, from higher project authority to resolve conflicts which may negatively affect project objectives
3. Implement project activities throughout life cycle	3.1. Ensure agreed project phases, approval points and review points occur 3.2. Report progress against established project baselines to measure performance throughout the project life cycle 3.3. Implement established finalisation plans, procedures and activities 3.4. Identify and document integration management issues and recommended improvements, and pass on to higher project authority for application to future projects

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- literacy skills to write project plans, progress reports and project communications
- teamwork and communication skills to lead the project team and deal with stakeholders
- time management skills to ensure priorities are addressed
- planning and organising skills to manage the integration of project activities

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

- project life cycle
- role and responsibilities of the project manager
- project planning tools and techniques.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- development of project plans for multiple complex projects
- details of how plans were monitored and outcomes were reported
- knowledge of project life cycle.

Context of and specific resources for assessment

Assessment must ensure:

- access to project documentation relevant to project integration
- access to feedback from project stakeholders.

Method of assessment

A range of assessment methods should be used to assess practical skill and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
- oral or written questioning to assess knowledge of strategies for managing project integration and their application to different situations
- analysis of responses addressing case studies and scenarios which present project integration management issues and problems
- assessment of project reports and examples of project plans.

Guidance information for

Holistic assessment with other units relevant to the

EVIDENCE GUIDE**assessment**

- industry sector, workplace and job role is recommended, for example:
- other units from the Diploma of Project Management.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

The nine ***project management functions*** are:

- communications
- cost
- human resources
- procurement and contracting
- project integration
- quality
- risk
- scope
- time

Project plan may include:

- covering document which integrates the requirements of the nine functions of project management using appropriate formats and procedures
- single document
- multiple documents

Internal working environment may include:

- arrangement of project personnel and equipment
- identity and differentiation of the project within the larger environment
- personal working conditions
- physical location of project
- team dynamics

Finalisation plans, procedures and activities may include:

- final audit/reconciliation
- finalisation of account codes and other financial documentation

RANGE STATEMENT	
	• forwarding finalisation report to senior personnel • project evaluation • settling of financial liabilities • transferring of assets to client or originating owner • transition of responsibility/ownership of project deliverables/products • warranty requirements
<i>Integration management issues and recommended improvements</i> may include:	• evaluation using established success and failure criteria • knowledge management • lessons learned • records • training programs

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Project Management

Co-requisite units

Co-requisite units		

BSBPMG504A Manage project costs

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to identify, analyse and refine project costs to produce a budget, and to use this budget as the principal mechanism to control project cost. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to an individual who is clearly and solely responsible for the management and leadership of a complex project, either as an employee of an organisation or an external consultant. In the context of this unit a complex project is defined as a project which involves: - the need for a comprehensive and multi-faceted project plan - the need for a formal internal or external communications strategy - a dedicated and diverse project budget - multiple administrative components - multiple operational components - a wide range of stakeholders - a project operations team. The functions performed by a program manager to manage costs within multiple projects are addressed in BSBPMG604A Direct cost management of a project program.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine project costs	1.1.Determine resource requirements for individual tasks, with input from stakeholders and guidance of <i>others</i> 1.2.Estimate <i>project costs</i> to enable budgets to be developed and implement agreed cost management processes 1.3.Develop and implement a cost management plan, within <i>delegated authority</i>, to ensure clarity of understanding and ongoing management of project

ELEMENT	PERFORMANCE CRITERIA
	finances
2. Monitor and control project costs	2.1. Implement agreed <i>financial management processes and procedures</i> to monitor actual expenditure and to control costs 2.2. Select and use cost analysis methods and tools to identify cost variations, evaluate options and recommend actions to a higher project authority 2.3. Implement, monitor and modify agreed actions to maintain financial and overall project objectives throughout the project lifecycle
3. Conduct financial completion activities	3.1. Conduct appropriate activities to signify financial completion 3.2. <i>Review</i> project outcomes using available <i>records</i> and information to determine the effectiveness of cost management processes and procedures 3.3. Review cost management issues and identify improvements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- numeracy and budgeting skills to monitor expenditure and manage costs
- technology skills to use software for recording expenditure and reporting on finances
- analytical skills to evaluate processes and recommend improvements.

Required knowledge

- budgeting processes, tools and techniques
- methods and tools for costing and cost analysis.

Evidence Guide

EVIDENCE GUIDE

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- demonstrated evidence of monitoring project costs across the project life cycle for multiple complex projects
- knowledge of budgeting processes, tools and techniques.

Context of and specific resources for assessment

Assessment must ensure:

- access to workplace documentation including budgets, financial documents
- consideration of feedback from project stakeholders on how costs were managed.

Method of assessment

A range of assessment methods should be used to assess practical skill and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
- oral or written questioning to assess knowledge of strategies for managing project costs and their application to different situations.
- analysis of responses addressing case studies and scenarios which present project cost management issues and problems
- review of developed and implemented cost management plan
- review of documentation about project outcomes, cost management issues and identified improvements.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

- other units from the Diploma of Project Management.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Others may include:	• relevant project authority • program manager • project specialists or other personnel • team members
Project costs are estimated to a level of accuracy available considering:	• availability of information at the time • contingencies to allow for identified risks and uncertainty • organisational requirements, for example overhead and profit margin • stage of the project life cycle
Delegated authority means that activities will:	• be conducted routinely or as changing circumstances dictate • be done independently within broad guidance or by taking the lead of a team • involve consultation with other project members, teams and internal stakeholders • involve the selection, use and supervision of appropriate time management methods, tools and techniques • take into account internal organisational change and external environmental change
Financial management processes and procedures may include:	• approval processes • communication and reporting processes • financial authorisations/delegations • invoice procedures
Reviewing may include evaluations of:	• agreed major milestones, for example phases and sub-contracts • change of key personnel • delivery of major deliverables • finalisation of project and other agreed milestones
Records may include:	• budgets, commitment and expenditure • cost management lessons learned

RANGE STATEMENT

	• cost management plans • invoice and payment summaries • lists of potential costs • project and/or organisation files and records • recommended and approved courses of action • reports to relevant stakeholders

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Project Management

Co-requisite units

Co-requisite units		

BSBPMG508A Manage project risk

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to manage risk within a project to avoid adverse effects on project outcomes. It covers determining, monitoring and controlling project risks, and assessing risk management outcomes. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to an individual who is clearly and solely responsible for the management and leadership of a complex project, either as an employee of an organisation or an external consultant. In the context of this unit a complex project is defined as a project which involves: • the need for a comprehensive and multi faceted project plan • the need for a formal internal or external communications strategy • a dedicated and diverse project budget • multiple administrative components • multiple operational components • a wide range of stakeholders • a project operations team. The functions performed by a program manager to manage risk within multiple projects are addressed in BSBPMG608A Direct risk management of a project program.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine project risks	1.1. Identify, document and analyse <i>risks</i>, in consultation with stakeholders and higher project authority, as the basis for risk planning 1.2. Use established <i>risk management techniques and tools</i>, within <i>delegated authority</i>, to analyse risks, assess options and recommend preferred risk approaches 1.3. Develop risk management plans, secure agreement of stakeholders and communicate plans to ensure clarity of understanding and ongoing management of

ELEMENT	PERFORMANCE CRITERIA
	risk factors 1.4. Establish designated <i>risk management processes and procedures</i> to enable effective management and communication of risk events, responses and results
2. Monitor and control project risks	2.1. Manage project in accordance with established project and risk management plans to ensure a common approach to the achievement of objectives 2.2. Monitor progress against project plans to identify variances and <i>recommend responses</i> to a higher project authority for remedial action 2.3. Implement agreed risk responses and modify plans to reflect changing project objectives in an environment of uncertainty
3. Assess risk management outcomes	3.1. Review project outcomes to determine effectiveness of risk management processes and procedures 3.2. Identify and document risk issues and recommended improvements, and pass on to higher project authority for application in future projects

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- literacy skills to write risk management plans
- problem-solving skills to control risks
- lateral thinking skills to identify risks
- planning and organisational skills to monitor project progress
- analytical skills to review project outcomes in terms of risk management.

Required knowledge

- risk management framework
- risk management techniques, tools and approaches.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- demonstrated evidence of effective risk management for multiple complex projects
- knowledge of risk management techniques, strategies and tools.

Context of and specific resources for assessment

Assessment must ensure:

- access to workplace risk management documentation
- consideration of feedback from project stakeholders as to how risks were managed.

Method of assessment

A range of assessment methods should be used to assess practical skill and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
- oral or written questioning to assess knowledge of the risk management framework
- analysis of responses in addressing case studies and scenarios which present project scope management issues and problems
- review of risk management plans
- evaluation of monitoring of progress against project plans
- assessment of identified and documented risk issues and recommended improvements.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

- other units in the Diploma of Project Management.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Risks may be:

- actual
- likely/probable
- perceived
- potential

Risk management techniques and tools may include:

- calling upon personal experience and/or subject matter experts
- conducting or supervising qualitative and/or quantitative risk analysis, such as schedule simulation, decision analysis, contingency planning and alternative strategy development
- using specialist risk analysis tools to assist in the decision making process

Delegated authority refers to planning and activities that may:

- be conducted routinely or as changing circumstances dictate
- be done independently within broad guidance or by taking the lead of a team
- involve consultation with other project members, teams and internal stakeholders
- involve the selection, use and supervision of appropriate risk management methods, tools and techniques

Risk management processes and procedures may include:

- communication with stakeholders, dispute resolution and modification procedures
- implementation of risk control trigger mechanisms
- measurement of actual progress against planned milestones
- recording and reporting of major variance
- setting key milestones at significant points during the project and at completion

Recommended responses to variations may be made:

- in consultation with project team members, section heads, project manager and stakeholders
- independently or with higher project authority

RANGE STATEMENT	
	endorsement if necessary • regularly throughout the project life cycle • taking into account internal organisational change and external environmental change

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Project Management

Co-requisite units

Co-requisite units		

BSBRKG304B Maintain business records

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to maintain the records of a business or records system in good order on a day to day basis. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals requiring some understanding of relevant theoretical knowledge relating to recordkeeping functions. It is not assumed that individuals at this level would have responsibility for supervising the work of others; however it is assumed that as a recordkeeping practitioner their work will support effective recordkeeping and governance practices across the organisation. The application is in relation to the maintenance of records from an existing business or records system that has guidelines and processes to assist in the process. Work carried out in the interest of system maintenance will be performed under supervision or in consultation with more senior staff or users of the system.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Collate business records	1.1. Identify individual <i>records</i> or <i>information</i> which should be incorporated into <i>business or records system</i> according to organisational criteria 1.2. Sort records in accordance with workplace requirements 1.3. Adhere to <i>security and access requirements</i> in accordance with organisational procedures
2. Update business or records system	2.1. Identify and record control information for describing new records to be incorporated into business or records system 2.2. Update control information describing movement or use of records within business or records system 2.3. Accurately record and update control information in business or records system 2.4. Identify and remove records of completed business

ELEMENT	PERFORMANCE CRITERIA
	activities from current system for disposal
3. Prepare reports from the business or records system	3.1. Interpret requests for reports and clarify the content and frequency sought, where necessary 3.2. Prepare reports from business or records system in accordance with instructions or request 3.3. Prepare reports in accordance with organisational security and access procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to explain and clarify procedures, and to interview users to identify their records/information needs
- literacy skills to read and interpret nature of record content, functions and problems
- problem-solving and analysis skills to identify and manage records.

Required knowledge

- key provisions of relevant legislation from all forms of government, regulations, standards and documentation that may affect aspects of business operations, such as:
 - AS 5044.1:2002 AGLS Metadata element set
 - AS 5090:2003 Work process analysis for recordkeeping
 - AS ISO 15489:2004 Records management
 - AS ISO 23081.1:2006 Information and documentation - Records management processes - Metadata for records - Principles
 - Australian Stock Exchange(ASX) Principles of Good Corporate Governance
 - ethical principles
 - codes of practice
 - privacy and freedom of information
 - archives and records legislation
 - occupational health and safety
- general principles and processes of records management and records management systems, such as:
 - systems of control
 - records continuum theory

REQUIRED SKILLS AND KNOWLEDGE

- mandate and ownership of business process
- environmental context
- records characteristics.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- complying with organisational procedures and workplace requirements
- knowledge and understanding of business or records systems
- accurately recording information.

Context of and specific resources for assessment

Assessment must ensure:

- access to an actual workplace or simulated work environment
- access to office equipment and resources
- access to examples of records, recordkeeping systems and policies
- access to workplace reference materials such as procedural manuals and company policies.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- analysis of responses to case studies and scenarios
- demonstration of techniques
- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
- review of authenticated documents from the workplace or training environment
- oral or written questioning to assess knowledge of

EVIDENCE GUIDE	
	general principles and processes of business or records systems.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • administration units • other knowledge management units.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
<i>Records</i> may be:	• at different stages of use: • active • archival • digital: • remote drives • servers • CDs • DVDs • imaging systems • PC-based applications • mainframe • physical: • audio-visual or multimedia • graphic • microform • paper-based (acid free or multiple copies) • from a variety of sources: • already in the custody of the organisation • in the process of being transferred between organisations

RANGE STATEMENT	
Information may include:	• customer relationship management • expenditure • human resources management • invoicing/sales • legislative/regulatory/licensing compliance • risk management • stock control • taxation, asset management
Business or records systems may be:	• archival control systems • business systems • cash register-based systems • characteristics relating to: • aggregations • context • entities • metadata • current business or records systems • electronic records and document management system (ERDMS) • informal • paper-based accumulation and card systems • PC-based accounting systems, employee and tax records systems • proprietary recordkeeping package • storage facilities systems • systems unique to individual workplaces and organisations
Security and access requirements may relate to:	• individuals or positions of individuals • protection of privacy • security restrictions • trade secrets or commercial-in-confidence information
Reports may be:	• ad hoc • computer generated • hand prepared • part of a management solution for another support/operational function • regular records management reports • system management reports

Unit Sector(s)

Unit sector	

Competency field

Competency field	Knowledge Management - Recordkeeping

Co-requisite units

Co-requisite units		

BSBRSK401A Identify risk and apply risk management processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to identify risks and to apply established risk management processes to a subset of an organisation or project's operations that are within the person's own work responsibilities and area of operation. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals with a broad knowledge of risk analysis or project management who contribute well developed skills in creating solutions to unpredictable problems through analysis and evaluation of information from a variety of sources. They may have responsibility to provide guidance or to delegate aspects of these tasks to others. In this unit, risks applicable within own work responsibilities and area of operation, may include projects being undertaken individually or by a team, or operations within a section of the organisation.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify risks	1.1. Identify the <i>context</i> for risk management 1.2. Identify <i>risks</i> using <i>tools</i> , ensuring all reasonable steps have been taken to identify all risks 1.3. Document identified risks in accordance with relevant policies, procedures and legislation
2. Analyse and evaluate risks	2.1. Analyse and document risks in consultation with relevant <i>stakeholders</i> 2.2. Undertake <i>risk categorisation</i> and determine <i>level of risk</i> 2.3. Document analysis processes and outcomes
3. Treat risks	3.1. Determine appropriate <i>control measures</i> for risks and assess for strengths and weaknesses 3.2. Identify control measures for all risks

ELEMENT	PERFORMANCE CRITERIA
	3.3.Refer risks relevant to whole of organisation or having an impact beyond own work responsibilities and area of operation to others as per established policies and procedures 3.4.Choose and implement control measures for own area of operation and/or responsibilities 3.5.Prepare and implement treatment plans
4. Monitor and review effectiveness of risk treatment/s	4.1.Regularly review implemented treatment/s against <i>measures of success</i> 4.2.Use review results to improve the treatment of risks 4.3.Provide assistance to auditing risk in own area of operation 4.4.Monitor and review management of risk in own area of operation

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- literacy skills sufficient to read and understand a variety of texts; and to write, edit and proofread documents to ensure clarity of meaning, accuracy and consistency of information
- research and data collection skills to monitor and evaluate risks
- problem-solving skills to appropriately address identified risks.

Required knowledge

- Australian and international standards for risk management
- key provisions of relevant legislation from all levels of government that may affect aspects of business operations, such as:
 - anti-discrimination legislation
 - ethical principles
 - codes of practice
 - privacy laws
 - environmental issues
 - occupational health and safety
- organisational policies and procedures relating to risk management processes and

REQUIRED SKILLS AND KNOWLEDGE

- strategies
- auditing requirements relating to risk management.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- identification, analysis and evaluation of risks
- demonstrated understanding of personal role in relation to wider organisational or project context
- demonstrated understanding of risk management processes and procedures.

Context of and specific resources for assessment

Assessment must ensure:

- access to workplace documentation relating to risk management
- access to risk management tools and frameworks.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
- review of documentation outlining risk analysis processes and outcomes
- analysis of responses to case studies and scenarios
- oral or written questioning to assess knowledge of Australian and international standards for risk management
- review of implementation of treatment plans.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

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- general administration units
- other risk management units.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Context may include:

- any related projects or organisations
- any resources, including physical assets, which are vital to operations
- key operational elements and service of the organisation
- organisation or project, how it is organised and its capabilities
- own role and responsibilities in relation to overall project or organisation design

Risks may include:

- commercial and legal relationships
- economic circumstances and scenarios
- human behaviour
- individual activities
- management activities and controls
- natural events
- political circumstances
- positive risk
- technology - technological issues

Tools may include:

- documentation to assist in process of identifying risk, and assessing impact and likelihood of occurrence
- standard instruments developed for the organisation and contextualised for sections of the workplace's operations, such as checklists and testing procedures
- tools to prioritise risks, including where relevant, numerical scoring systems for risks

RANGE STATEMENT	
Stakeholders may include:	• contractors • employees • financial managers • insurance agents • managers • public • service providers • suppliers • unions • volunteers
Risk categorisation may include:	• likelihood of risks: • almost certain • likely • possible • unlikely • rare • consequences of risks: • insignificant • minor • moderate • major • catastrophic • current control measures
Level of risk may include:	• low, treated with routine procedures • moderate, with specific responsibility allocated for the risk, and monitoring and response procedures implemented • high, requiring action, as it has potential to be damaging to the organisation or project • extreme, requiring immediate action, as it has potential to be devastating to the organisation or project
Control measures may include:	• hierarchy of controls: • reduction in likelihood of risks • reduction of consequences of risks • retention of risks • risk aversion • transfer of responsibility of risks

RANGE STATEMENT

<i>Measures of success</i> may include:	• costs • reductions in impact • reductions in likelihood • reductions in occurrence

Unit Sector(s)

Unit sector	

Competency field

Competency field	Regulation, Licensing and Risk - Risk Management

Co-requisite units

Co-requisite units		

BSBWOR502B Ensure team effectiveness

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to facilitate all aspects of teamwork within the organisation. It involves taking a leadership role in the development of team plans, leading and facilitating teamwork and actively engaging with the management of the organisation. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to managers and addresses the need for managers to facilitate work teams and to build a positive culture within work teams. The unit takes a systematic and planned approach to developing teams. It includes the soft skills as well as more structured approaches to the management of teams. At this level, work will normally be carried out within complex and diverse methods and procedures which require the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Establish team performance plan	1.1. <i>Consult</i> team members to establish a common understanding of team purpose, roles, responsibilities and <i>accountabilities</i> in accordance with organisational goals, plans and objectives 1.2. Develop <i>performance plans</i> to establish expected <i>outcomes, outputs, key performance indicators</i> and goals for work team 1.3. <i>Support</i> team members in meeting expected performance outcomes
2. Develop and facilitate team cohesion	2.1. Develop <i>strategies</i> to ensure team members have input into planning, decision making and operational aspects of work team 2.2. Develop <i>policies and procedures</i> to ensure team members take responsibility for own work and assist

ELEMENT	PERFORMANCE CRITERIA
	others to undertake required roles and responsibilities 2.3. Provide feedback to team members to encourage, value and reward individual and team efforts and contributions 2.4. Develop processes to ensure that issues, concerns and problems identified by team members are recognised and addressed
3. Facilitate teamwork	3.1. Encourage team members and individuals to participate in and to take responsibility for team activities, including communication processes 3.2. Support the team in identifying and resolving work performance problems 3.3. Ensure own contribution to work team serves as a role model for others and enhances the organisation's image for all stakeholders
4. Liaise with stakeholders	4.1. Establish and maintain open communication processes with all stakeholders 4.2. Communicate information from line manager/management to the team 4.3. Communicate unresolved issues, concerns and problems raised by team members and follow-up with line manager/management and other relevant stakeholders 4.4. Evaluate and take necessary corrective action regarding unresolved issues, concerns and problems raised by internal or external stakeholders

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to explain team goals, to address team conflict and to build an environment of trust
- planning and organisational skills to keep team on track and focussed on work outcomes.

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

- group behaviour
- strategies for mentoring and coaching to informally guide and instruct team members
- issue resolution
- strategies for gaining consensus.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- range of techniques that can be used to build work teams, strengthen communications in the team and resolve issues
- methods for engaging with stakeholders and obtaining advice from outside the work team, to ensure team is focussed and on track
- knowledge of group behaviour.

Context of and specific resources for assessment

Assessment must ensure:

- access to appropriate documentation and resources normally used in the workplace.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- analysis of responses to case studies and scenarios
- assessment of written reports
- demonstration of team building techniques
- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
- observation of performance in role plays
- review of performance plans developed for work team
- review of policies and procedures developed to

EVIDENCE GUIDE	
	ensure team members take responsibility for own work.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: other units from the Diploma of Management.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
<i>Consultation</i> may refer to:	- conducting meetings, interviews, brainstorming sessions, email/intranet communications, newsletters or other processes and devices which ensure that all employees have the opportunity to contribute to team and individual performance plans - mechanisms used to provide feedback to the work team in relation to outcomes of consultation
<i>Accountabilities</i> may refer to:	- responsibilities as defined in position descriptions, codes of conduct/behaviour, duty statements or similar - statement of conduct outlining responsibilities/actions/performance
<i>Performance plans</i> may refer to:	- individual performance plans linked to team goals - team plans based on work assignments and responsibilities
<i>Outcomes, outputs, key performance indicators</i> may refer to agreed:	- changes in work roles and responsibilities - improved individual and team, performance and participation - improvements to systems, operations - measures for monitoring and evaluating the

RANGE STATEMENT	
	efficiency or effectiveness of systems or services • quality standards and expectations • targets for productivity improvements such as reduced downtime, higher production levels, decreases in absenteeism • targets for training and development
Support may include:	• Coaching • Mentoring • Training and development opportunities • Clarification of roles and expectations • Long term or short term plans • Meetings
Strategies may refer to:	• clarification of roles and expectations • electronic communication devices and processes, such as intranet and email communication systems, to facilitate input • long-term or short-term plans factoring in opportunities for team input • mentoring and 'buddy' systems to support team members in providing input • newsletters and briefings • training and development activities
Policies and procedures may refer to:	• organisational guidelines and systems that govern operational functions • procedures that detail the activities that must be carried out for the completion of actions and tasks • Standard Operating Procedures
Processes may refer to:	• brainstorming options with the team for addressing concerns • creating a matrix of issues and concerns and distributing for comment • discussions with individuals regarding their concerns • distributing drafts for comment with a range of options for resolution of concerns • training and development sessions
Stakeholders may include:	• Board members • business or government contacts • funding bodies

RANGE STATEMENT	
	• union/employee groups and representatives • work team
<i>Line manager/management</i> may refer to:	• chief executive officer • direct superior • other management representatives

Unit Sector(s)

Unit sector	

Competency field

Competency field	Industry Capability - Workplace Effectiveness

Co-requisite units

Co-requisite units		

ICAICT103A Use, communicate and search securely on the internet

Modification History

Version	Comments
ICAICT103A	This version first released with <i>ICA11 Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to connect to the internet, securely send and receive emails, search the internet using web browsers and interact securely and in a socially responsible manner with a range of different internet sites.

Application of the Unit

This unit applies to individuals who use business technology to perform a range of routine tasks in the workplace or home office. They use fundamental knowledge of internet connection requirements, email and web browsers to perform tasks under direct supervision or with limited responsibility.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	Performance Criteria

<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</i>

Elements and Performance Criteria

1. Connect to and access the internet	1.1 Connect to the internet through the existing internet connection and confirm functionality 1.2 Open an internet browser and set a home page of personal choice by setting internet options 1.3 Ensure internet browser software security 1.4 Adjust the display of the internet browser to suit personal requirements 1.5 Modify toolbar to meet user and internet browser needs 1.6 Access a particular website, note privacy and other conditions of use and retrieve data 1.7 Use socially responsible behaviour when sharing information on the internet 1.8 Enter uniform resource locator (URL) in address line of internet browser
2. Use email for communications	2.1 Open email application package, create new email message and add addressees 2.2 Compose the text of an email message according to organisational guidelines and spell check and edit text as required 2.3 Create and add an automatic signature for the user 2.4 Attach files to the email message where required 2.5 Determine and set a priority and send the email message 2.6 Reply to and forward a received message using available features 2.7 Open and save an attachment to the relevant folder

	2.8 Search for, sort and save email message using available settings 2.9 Adjust email accounts to restrict and quarantine possible email security problems 2.10 Print an email message as required
3. Search the internet	3.1 Review organisational guidelines on internet access 3.2 Open an internet application and locate and access a search engine on the internet and define search expressions based on the data required 3.3 Enter appropriate key words into the search engine to locate the desired information 3.4 Refine a search depending on outcomes of the original search 3.5 Save search expression results and present them in a report according to the information requirements 3.6 Create a bookmark within the internet browser or a link for the required web page for the key results 3.7 Save the key results in a bookmark folder 3.8 Modify the internet browser options for printing and print a web page 3.9 Close the internet browser
4. Access and use consumer-specific sites on the internet	4.1 Identify, access and review information-specific sites to gain consumer information 4.2 Identify and use internet application sites to lodge details and gain access and information 4.3 Access and use online forms on the internet
5. Undertake online transactions	5.1 Access an online transaction site 5.2 Ensure security of transaction site 5.3 Enter required information into fields on merchant's website 5.4 Ensure that pop-up dialog boxes, prompts or feedback mechanisms are completed

	5.5 Enter, check and make changes to preferred transaction options 5.6 Complete online transaction 5.7 Record and archive receipts according to business processes 5.8 Close down and leave transaction process
6. Conduct an advanced search	6.1 Use search tools and advanced search features 6.2 Use Boolean search techniques when required to enhance the search 6.3 Use multiple or meta-search tools with a range of key words 6.4 Use search engines particular to a field of knowledge to refine the outcome 6.5 Access related virtual community sites and newsgroups and note their objectives and operational arrangements 6.6 Conduct a search with domain names to refine the search
7. Use information that has been located	7.1 Cross-reference information found by using several websites to determine accuracy of information obtained 7.2 Check date that website was last updated or properties of website to determine currency of information 7.3 Determine website authority by looking at copyright statements, privacy statements and organisational information 7.4 Save and print information found in different file forms

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
 - communicate with peers and supervisors
 - seek assistance and expert advice
 - undertake online transactions

- literacy skills to:
 - compose email messages
 - interpret user manuals and help functions
 - read and interpret basic online documents
 - read and write basic workplace documents
- problem-solving skills to address common operational problems when using web browsers
- research skills to locate varied sources of information online
- technical skills to use:
 - digital device
 - email applications
 - internet search functions
 - peripheral hardware
 - keyboard to enter text into web browsers and email applications.

Required knowledge

- basic technical terminology related to reading help files and prompts
- basic knowledge of copyright and privacy statements
- different types of messages that occur, such as:
 - error messages
 - message to install plug-ins
- different types of search engines
- procedures for using email applications
- procedures for evaluating and assessing the authority, reliability and authenticity of information
- internet search functions
- internet speed, traffic loads related to times of accessing the internet
- internet web browsers
- makeup and structure of internet addresses
- organisational guidelines on internet and email use (web etiquette or netiquette)
- different internet search techniques
- web browser update techniques
- use of key words and bookmarks.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the ability to: • connect to and access the internet • send and receive emails • secure internet access and email communications • use search tools to locate information • research and select appropriate website • undertake online interactions • make an informed assessment of the accuracy, currency, authority and reliability of the site and information located.
Context of and specific resources for assessment	Assessment must ensure access to: • use of PC or digital device with internet • search engines currently used in industry • organisational policies on internet usage • appropriate learning and assessment support when required. Where applicable, physical resources should include equipment modified for people with special needs.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • verbal or written questioning to assess candidate's knowledge of internet access requirements, email features and search engine attributes • direct observation of candidate accessing the internet, using email, and searching and interacting with consumer sites using advanced search features • direct observation of candidate undertaking online interactions • review of search results, including assessment of the accuracy, currency and reliability of the site and information located.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate. Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and the work being performed. Indigenous people and other people from a non-English speaking background may need additional support. In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Internet connection may include:	• 3G or high-speed downlink packet access (HSDPA) cellular network • 4G cellular network • broadband • cable • dial-up • digital subscriber line (DSL) • fibre to the 'x' (FTTx) • high-speed digital subscriber line (HSDSL) • integrated services digital network (ISDN) network terminating unit (NTU) • satellite • wireless modem • worldwide interoperability for microwave access (WiMAX).
Internet browser may include:	• Firefox • Galleon • Google Chrome • Internet Explorer • Konqueror • Lynx • Mozilla • Netscape Navigator • Opera • Phoenix.
Internet options may include:	• configuring: • history • home page • location of temporary files • privacy level • security level • type of connection.

Browser software security may include:	• application enabling • cookie handling • pop-up blocking • privacy levels • security zones • trusted sites.
Socially responsible behaviour may relate to:	• not using obscene, profane, lewd, vulgar, rude, inflammatory or threatening language • not publishing information that, if acted upon, could cause damage to property or persons, nor publish deliberately false or defamatory information about a person or organisation • not engaging in personal attacks, including prejudicial or discriminatory attacks, not harass (distress or annoy) another person • not accessing material that is profane, obscene, pornographic or paedophilic, that promotes illegal acts, or that advocates violence or discrimination • not sending inappropriate emails • taking responsibility for protecting personal information by not revealing personal information, including names, addresses, photographs, credit card details and telephone numbers.
Organisational guidelines may include:	• content of emails • downloading information and accessing particular websites • opening mail with attachments • personal use of emails and internet access • virus risk (MS Windows OS and Mac OS only).
Files may include:	• email messages • HTML pages • music • PDF files • pictures • text files.
Email security may relate to:	• taking steps to restrict: • malware • phishing • spam.
Search engine may include:	• Alexa Internet • AllTheWeb • AltaVista

	• Bing • Cuil • Excite • Galaxy • GigaBlast • Go.com • Google • HotBot • Live Search • Lycos • search.AOL • specific search engines • Yahoo.
Internet application sites may include:	• consumer: • banking • shopping • education and training • government • health • interest groups • news • travel.
Transaction options may include:	• currency • delivery address • freight • invoice address.
Boolean search may include terms:	• AND • OR • NOT • NAND • NOR • NE • GE • LE • GT • LT.

Unit Sector(s)

General ICT

Custom Content Section

Not applicable.

MEM13014A Apply principles of occupational health and safety in the work environment

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers following occupational health and safety procedures in an engineering or similar work environment.

Application of the Unit

Application of the unit	This unit covers essential skills and knowledge that underpin all units within the Metal and Engineering Training Package. The unit applies to working in the engineering, manufacturing or similar industries. Competencies demonstrated would be associated with performance of duties and use of specialist skills. This unit and these standards do not cover the skills of emergency teams such as fire fighting, first aid officer etc. Band: A Unit Weight: There is no unit weighting for this unit.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Follow safe work practices	1.1. Work is carried out safely and in accordance with company policy and procedures and legislative requirements. 1.2. Housekeeping is undertaken in accordance with company procedures. 1.3. Responsibilities and duties of employees are understood and demonstrated in day-to-day actions. 1.4. Personal protective equipment is worn and stored according to company procedures. 1.5. All safety equipment and devices are used according to legislative requirements and company/manufacturers' procedures. 1.6. Safety signs/symbols are identified and followed as per instruction. 1.7. All manual handling is carried out in accordance with

ELEMENT	PERFORMANCE CRITERIA
	legal requirements, company procedures and National Occupational Health&Safety Commission guidelines. 1.8. Emergency equipment is identified and appropriate use is demonstrated.
2. Report workplace hazards and accidents	2.1. Actual and foreseeable workplace hazards are identified during course of work and reported to appropriate person according to standard operating procedures. 2.2. Accidents and incidents are reported according to workplace procedures
3. Follow emergency procedures	3.1. Appropriate personnel and emergency services and means of contacting them in the event of an incident can be identified. 3.2. Emergency and evacuation procedures are understood and carried out where required. 3.3. Company evacuation procedures are followed in case of an emergency.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- following safe working practices
- maintaining a safe and clean condition workplace
- carrying out workplace activities such as working safely, not endangering others, following company and legislative requirements, following procedures
- selecting, wearing and storing appropriate personal protective equipment
- using appropriate safety equipment and devices
- carrying out work with the information given by safety signs and symbols
- carrying out manual handling principles
- using emergency equipment correctly
- noting workplace hazards
- contacting appropriate personnel and emergency services in the event of an accident

REQUIRED SKILLS AND KNOWLEDGE

- following emergency and evacuation procedures
- communicating and interpreting information appropriate to OH&S within the scope of this unit
- checking and clarifying task-related information
- communicating with emergency personnel
- checking for conformance to specifications

Required knowledge

Look for evidence that confirms knowledge of:

- rights, responsibilities and duties of employees and employers
- use of personal protective equipment
- appropriate equipment and safety devices for particular workplace tasks
- reasons for using safety equipment and devices
- meaning and application of safety signs and symbols
- procedures and limits for manual handling
- location and use of emergency equipment
- reasons for selecting a particular type of equipment
- procedures for identifying and reporting hazards
- persons or services to be contacted in the event of a range of accidents
- reasons for use of standard procedures
- standard procedures including those for emergencies and evacuation
- hazards and housekeeping requirements associated with the work environment
- safe work practices and procedures

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply principles of occupational health and safety in the work environment.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required

EVIDENCE GUIDE	
	knowledge, and be capable of applying the competency in new and different situations and contexts.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with applying principles of occupational health and safety in the work environment or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised

RANGE STATEMENT

wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Personal protective equipment

- Safety glasses
- Face and head protection
- Hard hats
- Protective footwear
- Protective clothing
- Breathing apparatus
- Ear protection
- Gloves

Safety equipment and devices

- Safety harness
- Screens, barriers and shielding
- Extraction fans
- Machine guards
- Isolation devices

Safety signs/symbols

- Standard signage/symbols conforming to AS 1319-1994
- Safety signs for the occupational environment, and any other applicable Australian Standards
- Workplace-specific signage
- Typical classes of relevant signs/symbols are:
 - mandatory
 - prohibition
 - danger
 - caution
 - general safety
 - safety information
 - fire safety equipment

Manual handling

Posture, weight limits, bending, twisting

Hazards

For the purposes of this unit a hazard is defined as anything with the potential for injury or damage. Hazards may be:

- physical:
 - machinery
 - hot metal
 - electricity

RANGE STATEMENT	
	• fire • poor housekeeping: • spills • trip hazards such as congestion, clutter, waste build-up • cleanliness • noise and vibration • extremes of temperature and humidity • condition/design of equipment • individual (behavioural): • skylarking and foolishness • substance abuse • failure to follow procedures • lack of training or experience • carelessness • poor personal health/hygiene • using the wrong techniques/procedures • ignoring safety rules and signs • taking short cuts • knowingly using unsafe equipment • environmental hazards: • explosive materials • flammable materials • poor ventilation • poor lighting • dust • fumes • vapours • gases • liquids • mineral fibres • chemical spills • pollutants • other toxic or dangerous materials
Accidents and incidents	For the purposes of this unit an accident is defined as 'an unplanned and unexpected event which interrupts the normal course of activity. It may or may not result in damage or injury'. This definition

RANGE STATEMENT	
	includes near misses. An incident is defined here as any other unexpected or extraordinary event not classed as an accident. Examples include: • burns • poisoning • broken limbs • eye accidents • other injuries • spills • explosions • falls • electrical accidents • breakdowns • damage to equipment or materials/product • incidents involving physical, individual or environmental hazards
Appropriate personnel	• Safety representative • Occupational health and safety officer • OHS committee member • First aid officer • Supervisor • Union representative
Emergency and evacuation procedures	Documented workplace emergency procedures

Unit Sector(s)

Unit sector	

Co-requisite units

Co-requisite units	

Co-requisite units		

Competency field

Competency field	Occupational health and safety

MSACMC210A Manage the impact of change on own work

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the skills needed by an employee in a competitive manufacturing organisation which requires the employee to participate in and manage the impact of the implementation of competitive manufacturing initiatives on their own work life.

Application of the Unit

Application of the unit	In a typical scenario, an employee in a competitive manufacturing organisation is required to positively participate in ongoing and continuous change in order for them to be implemented successfully. The employee will be expected to deal with these changes as part of a team and to give feedback from their own perspective. This unit requires the application of skills associated with problem solving, planning and organising and self management for assessing and managing the impact of change on own work. This unit also requires the ability to seek information and feedback from team members on the impact of changes and suggested improvements.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Examine the impact of change on own work practices	1.1. Examine changes to work flow 1.2. Examine changes to equipment/process/physical environment 1.3. Examine changes to work relationship with team members and other teams 1.4. Examine changes to data collection needs 1.5. Examine changed work for impacts on health, safety and environment 1.6. Examine changes to quality requirements 1.7. Identify any additional individual skill needs 1.8. Identify other areas requiring assistance 1.9.
2. Implement change	2.1. Review changes which may have adverse impact with team leader 2.2. Adopt changes to individual work practice 2.3. Seek assistance in gathering/processing data as required 2.4. Implement the data collection/processing and take actions on resulting information in accordance with <i>procedures</i>

ELEMENT	PERFORMANCE CRITERIA
	2.5. Seek assistance/training to meet needs caused by change
3. Implement continuous improvement	3.1. Critically examine all changes 3.2. Identify impacts of changes both up and down the immediate value chain 3.3. Identify areas for improvement 3.4. Make recommendations for improvement in accordance with procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- analysis
- communication
- problem solving
- reading and interpreting
- teamwork

Required knowledge

- current process and principles of operation
- sources of data on the process/plant and possible applications to information
- methods of determining own skill needs and developing skills required
- health, safety and environment (HSE) principles as relevant to own job
- basic continuous improvement principles

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for the training package.

Overview of assessment

The employee will respond readily to each initiative, making

EVIDENCE GUIDE	
requirements	its implementation easier and recommending improvements.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of commitment to a range of initiatives should be available.
What are the specific resource requirements for this unit?	Access to an organisation using competitive manufacturing.
In what context should assessment occur?	Assessment will need to occur in a workplace following competitive manufacturing.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be assessed concurrently with any other relevant unit which relates to making a change in the workplace.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	If evidence is provided from an initial move to competitive manufacturing, then sufficient evidence may come from this initial adjustment. Where evidence is provided from a series of improvements, then it will need to be gathered from a range of initiatives to provide sufficient evidence.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Managing impact of change	All Elements may be undertaken individually or as part of a team and may require assistance from the team leader for areas outside the employee's range of responsibility and authority.
Competitive manufacturing	Competitive manufacturing is used to describe the range of systemic manufacturing practice concepts and approaches. It covers but is not limited to: • lean manufacturing • agile manufacturing • preventative and predictive maintenance approaches • monitoring and data gathering systems such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Manufacturing Resource Planning (MRP), and proprietary systems such as SAP • statistical process control systems including six sigma and three sigma • Just In Time (JIT), kanban and other pull related manufacturing control systems • supply, value, and demand chain monitoring and analysis • other continuous improvement systems. Competitive manufacturing should be interpreted so as to take into account the stage of implementation of competitive manufacturing approaches, the enterprise's size and work organisation, culture, regulatory environment and manufacturing sector.
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures'

RANGE STATEMENT	
	also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
Continuous improvement	Continuous improvement (also called kaizen) - the philosophy of continual improvement, that every process can and should be continually evaluated and improved in terms of time required, resources used, resultant quality, and other aspects relevant to the process.
Value chain	Competitive manufacturing organisations encompass the entire production system, beginning with the customer, and includes the product sales outlet, the final assembler, product design, raw material mining and processing and all tiers of the value chain (sometimes called the supply chain). Any truly 'competitive' system is highly dependent on the demands of its customers and the reliability of its suppliers. No implementation of competitive manufacturing can reach its full potential without including the entire 'enterprise' in its planning.

Unit Sector(s)

Unit Sector	CM Change/interpersonal

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMC411A Lead a competitive manufacturing team

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed by people who lead teams in a competitive manufacturing environment. The team may be operating in manufacturing or in a manufacturing support function e.g. maintenance, office, warehousing etc.

Application of the Unit

Application of the unit	In a typical scenario, the team leader in a <i>competitive manufacturing</i> organisation needs to integrate a range of knowledge and skills. The team leader must lead and assist team members to understand and apply a holistic view of their job and the team's role within the organisation and the objectives that the team must meet as part of the competitive manufacturing system used by the enterprise. This unit requires the application of skills associated with communication, teamwork, problem solving, initiative, enterprise, planning, organising and self management in order to provide leadership in a competitive manufacturing team. This unit has a strong emphasis on planning and implementation, but also requires an ability to learn from experience and feed new information back into strategies to improve both the team's and own performance.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Facilitate the development of process and competitive manufacturing knowledge	1.1.Ensure necessary technical documentation and information about the process and <i>competitive manufacturing</i> is available to the team 1.2.Develop mentoring processes for team members 1.3.Structure team activities in a way which facilitates the ongoing development of the skills and knowledge of team members 1.4.Arrange for the provision of workforce development and training for team members as appropriate 1.5.Encourage team members to apply technical knowledge to the process.
2. Facilitate efficiency improvements in team activities	2.1.Ensure <i>budgets, operating procedures</i> and other related documentation is available to the team 2.2.Assist team members apply this information to the process responsibilities of the team 2.3.Encourage team members to identify <i>waste</i>

ELEMENT	PERFORMANCE CRITERIA
3. Resource and encourage a proactive maintenance approach	2.4. Develop an environment where efficiency improvements are recommended by team members 3.1. Develop communications between specialists outside the team and team members 3.2. Develop strategies to monitor and deal with key reliability issues 3.3. Resource and encourage team members to identify and take appropriate action on potential equipment problems 3.4. Arrange for workforce development and training for team members as required in proactive maintenance procedures and techniques 3.5. Involve team members in relating identified problems to the maintenance strategy, and developing any required changes, to ensure awareness, learning and commitment
4. Implement process and organisation improvements	4.1. Plan the implementation of team suggested and externally directed improvements 4.2. Facilitate team member commitment to, and involvement in, the implementation planning of improvements and to follow improvements to their conclusion 4.3. Encourage the application of the 'plan, do, measure, improve, control' approach to the job 4.4. Arrange for workforce development and training as required to facilitate continued team involvement in improvement processes 4.5. Involve team and other key personnel in identification of skill needs and means of skills acquisition to fill any identified gaps

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- communication techniques

REQUIRED SKILLS AND KNOWLEDGE
• negotiation skills • information finding and analysing/using skills • team work • planning and organising • problem solving
Required knowledge:
• understanding of the competitive manufacturing process or processes used at the enterprise

Evidence Guide

EVIDENCE GUIDE The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.	
Overview of assessment requirements	The competent person would be able to lead a competitive manufacturing team and facilitate their improving the process.
What critical aspects of evidence is required to demonstrate competency in this unit?	Evidence of effective team leadership would be required.
In what context should assessment occur?	Assessment needs to occur in an organisation implementing a competitive manufacturing environment or by a project.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit could be assessed concurrently with other team leader units dealing with change/improvement in the organisation.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct

EVIDENCE GUIDE	
	observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment
What evidence is required for demonstration of consistent performance?	Evidence from one significant manufacturing improvement or change process may be sufficient. For less significant improvement or changes, a range of changes will be needed to generate sufficient evidence.
What are the specific resource requirements for this unit?	Access to an organisation implementing a significant change to or in competitive manufacturing.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Competitive manufacturing	<i>Competitive manufacturing</i> is used to describe the range of systemic manufacturing practice concepts and approaches. It covers but is not limited to: • lean manufacturing • agile manufacturing • preventative and predictive maintenance approaches • monitoring and data gathering systems such as Systems control and data acquisition software (SCADA), enterprise resource planning systems (ERP), Manufacturing resource planning (MRP),

RANGE STATEMENT	
	and proprietary systems such as SAP etc. • statistical process control systems including six sigma and three sigma • just in time, kanban and other pull related manufacturing control systems • supply, value, and demand chain monitoring and analysis • other continuous improvement systems. Competitive manufacturing should be interpreted so as to take into account the stage of implementation of competitive manufacturing approaches, the enterprise's size and work organisation, culture, regulatory environment and manufacturing sector..
Team	Team may include work teams from all sections of the organisation including production, maintenance, technical, administration/finance, sales/marketing.
Budgets	Budgets include financial, time, materials/product and other business plans which are relevant to the team and the work area.
Waste	Waste (also known as muda in the Toyota Production System and its derivatives) is any activity which does not contribute to customer benefit/features in the product. Within manufacturing, categories of waste include: • excess production and early production • delays • movement and transport • poor process design • inventory • inefficient performance of a process • making defective items Waste for this unit may include activities which do not yield any benefit to the organisation or any benefit to the organisations customers.
Key reliability issues	Key reliability issues are typically things like cleanliness, lubrication and correct adjustment which are most likely to lead to failure.

Unit Sector(s)

Unit Sector	CM Change/interpersonal

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMS200A Apply competitive manufacturing practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the skills needed to implement basic improvement practices within a competitive manufacturing organisation. The unit focuses on bringing together the basic concepts and the holistic application of these basic concepts and processes to manufacturing. It would typically be carried out working as part of a team.

Application of the Unit

Application of the unit	In a typical scenario, an organisation has embarked on the competitive manufacturing path. This requires certain critical skills and principles to be practised in order for competitive manufacturing to succeed. These skills are to be used within the scope of the individual's job and authority. This unit requires the application of skills associated with planning and organising own role within a competitive manufacturing framework. Initiative and enterprise and problem solving is also required to identify the contributions of self and others in the value chain and identify opportunities for improvement.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Focus on the basic competitive manufacturing concepts	1.1. Identify customers and their needs/requirements 1.2. Identify suppliers 1.3. Identify value contributions along the chain 1.4. Identify and recommend methods of increasing own contribution to the value chain
2. Improve the product/process value	2.1. Identify customer features/benefits in the product 2.2. Identify items which contribute to those features/benefits 2.3. Identify things which do not contribute to customer benefits/features 2.4. Recommend methods of increasing features/benefits
3. Use competitive manufacturing tools	3.1. Select appropriate tools for the job/process 3.2. Apply the tool to the job/process 3.3. Monitor the job/process and make adjustments to improve it in accordance with procedures

ELEMENT	PERFORMANCE CRITERIA
	3.4. Identify own skill requirements and seek skill development if required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• analysis • communication • planning • teamwork • problem solving
Required knowledge
• the customers and the benefits they derive from the products • the suppliers and their capabilities • product waste • relevant tools for their job and how to apply them • factors impacting on the product, process and waste, particularly those wholly or partially under their control (and how to control them)

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.	
Overview of assessment requirements	The person will work effectively in a competitive manufacturing environment, making continual positive contributions to the improvement of the business within the scope of their job.
What are the specific resource requirements for	Access is required to an organisation implementing competitive manufacturing.

EVIDENCE GUIDE	
this unit?	
What critical aspects of evidence are required to demonstrate competency in this unit?	There should be evidence of the individual's contribution to the value chain and willing application of competitive manufacturing to their job.
In what context should assessment occur?	Assessment should occur in an organisation implementing competitive manufacturing.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit is related to all other units at this level in that it is the general implementation of competitive manufacturing. It could be assessed concurrently with any unit dealing with the <i>tools</i> of competitive manufacturing. This unit is related to: • <i>MSACMS400A Implement a competitive manufacturing system</i> which covers the intermediate skill levels in CM.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	This should be a routine part of the operator's job and there should be evidence that these skills are practised routinely.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive manufacturing

Competitive manufacturing is used to describe the range of systemic manufacturing practice concepts and approaches. It covers but is not limited to:

- lean manufacturing
- agile manufacturing
- preventative and predictive maintenance approaches
- monitoring and data gathering systems such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Manufacturing Resource Planning (MRP), and proprietary systems such as SAP
- statistical process control systems including six sigma and three sigma
- Just In Time (JIT), kanban and other pull related manufacturing control systems
- supply, value, and demand chain monitoring and analysis
- other continuous improvement systems.

Competitive manufacturing should be interpreted so as to take into account the stage of implementation of competitive manufacturing approaches, the size of the enterprise, the work organisation, culture, regulatory environment and manufacturing sector.

Customer

Customer may be interpreted to be an internal customer, but typically the benefits to the final customer should be used as the basis for the identification of waste. The operator does not need to interface directly with the external customer, but should be provided with sufficient information to enable them to identify customer benefits and features.

Supplier may be interpreted to be an internal supplier, but typically the external supplier and their abilities should be known. The operator does not need to interface directly with the external supplier, but should

RANGE STATEMENT	
	be provided with sufficient information to enable them to identify supplier abilities.
Tools	Tools are used in this unit to mean the tools of competitive manufacturing such as 5S, 6 s , continuous improvement, cause effect diagrams
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Unit Sector(s)

Unit Sector	CM Systems

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMS201A Sustain process improvements

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the skills needed to prevent implemented process improvements slipping back to former practices or digression to less efficient practices.

Application of the Unit

Application of the unit	The unit covers the skills needed to ensure that process improvements are sustained and opportunities taken to suggest further improvements. Improvement initiatives can be made by any of a number of methods and by teams or individuals. The unit assumes that desired levels of performance or quality are known to employees. This unit applies to an environment where continuous improvement in a manufacturing enterprise is being undertaken. The identification of the improvement may occur independently of the application of this unit. The unit can be applied to all areas of a manufacturing enterprise including production, maintenance, logistics and office functions. This unit requires the application of skills associated with problem solving, initiative and enterprise and self management in order to understand, implement and monitor improvement practices with the operation of plant, equipment and manufacturing processes. It also requires the ability to identify and address personal skill gaps in order to manage own ability to implement change.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Implement corrective actions	1.1. Identify impact of process improvements on systems in own work area 1.2. Examine process improvements to equipment, processes or products 1.3. Clarify changes to process improvements as required 1.4. Identify any additional, personal skill gaps and seek skill development 1.5. Adopt improved process
2. Check changes	2.1. Identify claimed <i>improvements</i> 2.2. Identify methods of observing claimed improvements 2.3. Check if claimed improvements are occurring

ELEMENT	PERFORMANCE CRITERIA
	and report problems in accordance with procedures
3. Check for further improvements	3.1. Look for areas of possible further improvement 3.2. Discuss further improvements with peers and supervisors 3.3. Take action to make improvements in accordance with procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- technical competence to perform job
- problem solving
- teamwork
- communication

Required knowledge

- existing procedures
- modified procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements

The person will be able to demonstrate their willing adoption of new equipment, processes, procedures and practices as well as their expertise at implementing them and making critical reviews of their performance in line with their level of competence and authority.

What critical aspects of

Evidence of having sustained improvements in their own job

EVIDENCE GUIDE	
evidence are required to demonstrate competency in this unit?	and of assessing these improvements for their real impact.
What are the specific resource requirements for this unit?	Access to a workplace implementing competitive manufacturing strategies or appropriate simulated environment is required. No other specific resources are required.
In what context should assessment occur?	Assessment will need to occur in a workplace where improvements are occurring which impact on the operator's job and they are required to implement changes which sustain these improvements. The unit may also be assessed on a project basis in a simulated environment.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be assessed concurrently with appropriate units on continuous improvement/kaizen. This unit relates to improvements in a person's own area of responsibility. <i>MSACMS401A Ensure process improvements are sustained</i> is an intermediate skill level unit in the CM.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence should be available from multiple small changes, or from a large change which has had multiple facets implemented over a period of some months.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Performance	Performance may be thought of as the rate of output of the plant compared to the rate required to meet demand. Performance might also be thought of in terms of takt where takt time is the allowable time to produce one product at the rate customers are demanding it. This is NOT the same as cycle time, which is the normal time to complete an operation on a product (which should be less than or equal to takt time).
Procedures	All work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
Improvements	Improvement procedures in some enterprises is also known by baka-yoke which is a manufacturing technique of preventing mistakes by designing the manufacturing process, equipment and tools so that an operation literally cannot be performed incorrectly. An attempt to perform incorrectly, as well as being prevented, is usually met with a warning signal of some sort; the term poka-yoke is sometimes referred to as a system where only a warning is provided.

Unit Sector(s)

Unit Sector	CM Systems

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMS400A Implement a competitive manufacturing system

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed to implement competitive manufacturing practices. Generally, five areas drive competitive manufacturing: cost, quality, delivery, safety/environment, and morale. In a competitive manufacturing company systems will need to be implemented which drive continuous improvement in all these areas, without one area competing unduly with another.

Application of the Unit

Application of the unit	In a typical scenario, team performance is continually reviewed against the five key areas and in liaison with other relevant people, and with the support of technical support staff, improvements in these five key areas are developed and implemented. Whereas other units may emphasise the competence to use one or more tools, this unit emphasises the ability to advance on all five key areas over a moderate time period. This unit requires the application of skills associated with problem solving and initiative and enterprise in order to identify opportunities to make improvements and maximise performance. Communication, teamwork and planning and organising skills will be required to implement improvements and address any conflicts that arise. This unit also requires an ability to identify appropriate technology, and to consider and integrate feedback on how personal performance can be improved. This requires self management and learning.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Optimise the manufacturing system	1.1. Apply competitive manufacturing practices to maximise health, safety and environment performance 1.2. Apply competitive manufacturing practices to maximise quality consistency 1.3. Apply competitive manufacturing practices to maximise performance by team members 1.4. Apply competitive manufacturing practices to maximise customer benefit/cost ratio 1.5. Apply competitive manufacturing practices to reduce lead time to delivery within the scope of the team's authority and responsibility 1.6. Negotiate with relevant stakeholders to resolve

ELEMENT	PERFORMANCE CRITERIA
2. Implement improvements	conflicts which arise 1.7. Select improvements which will deliver the greatest overall benefit for the resources required/available without reducing current performance on individual factors 2.1. Implement the chosen improvement/s 2.2. Check the selected improvements improve the system as a whole and do not result in unintended consequences 2.3. Monitor implementation and make adjustments as required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- communication
- communication
- interpersonal relationships
- prioritising
- mathematics
- statistics
- analysing
- conducting root cause analysis
- problem solving.
- solving.

Required knowledge:

- the customers and the benefits they derive from the products
- cost components and their relationship to customer benefits/features
- the suppliers and their capabilities
- product waste
- factors causing variability in a product and how to control them
- relevant tools for their job and how to apply them
- factors impacting on the product, process and waste, particularly those wholly or partially under their control (and how to control them)
- good health safety and environment (HSE) practice and factors impacting on HSE

REQUIRED SKILLS AND KNOWLEDGE

- performance
- morale and how to improve it
- optimisation techniques appropriate to the organisation and the job
- application of quality standards and processes.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements	The person should be able to continuously make improvements to all key aspects of their team/process and any change made should be of benefit to the system as a whole.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of the implementation of the competitive manufacturing system and the improvements made to product, process and team.
In what context should assessment occur?	Assessment needs to occur in an organisation implementing competitive manufacturing or using a suitable project.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be assessed concurrently with a unit on continuous improvement and or units on the use of competitive manufacturing tools. This unit is related to: • <i>MSACMS200A Apply competitive manufacturing practices</i> which covers the lower skill level aspects of this competency.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and

EVIDENCE GUIDE	
	colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence will generally come from the routine implementation of competitive manufacturing and the routine continuous improvements which flow from this. As such evidence from a range of improvements is necessary.
What are the specific resource requirements for this unit?	Access to an organisation implementing competitive manufacturing.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Competitive manufacturing	Competitive manufacturing is used to describe the range of systemic manufacturing practice concepts and approaches. It covers but is not limited to: • lean manufacturing • agile manufacturing • preventative and predictive maintenance approaches • monitoring and data gathering systems such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Manufacturing Resource Planning (MRP), and proprietary systems such as SAP etc.

RANGE STATEMENT	
	• statistical process control systems including six sigma and three sigma • Just in Time (JIT), kanban and other pull related manufacturing control systems • supply, value, and demand chain monitoring and analysis • other continuous improvement systems. Competitive manufacturing should be interpreted so as to take into account the stage of implementation of competitive manufacturing approaches, the enterprise's size and work organisation, culture, regulatory environment and manufacturing sector.
Tools	Tools is used in this unit to mean the tools of competitive manufacturing such as 5S, 6 sigma, continuous improvement, cause effect diagrams, etc.
Customer	Competitive manufacturing organisations encompass the entire production system, beginning with the customer, and includes the product sales outlet, the final assembler, product design, raw material mining and processing and all tiers of the value chain (sometimes called the supply chain). Any truly 'competitive' system is highly dependent on the demands of its customers and the reliability of its suppliers. No implementation of competitive manufacturing can reach its full potential without including the entire 'enterprise' in its planning. Customer may be interpreted to be an internal customer, but typically the benefits to the final customer should be used as the basis for the identification of waste. The operator does not need to interface directly with the external customer, but should be provided with sufficient information to enable them to identify customer benefits and features. Supplier may be interpreted to be an internal supplier, but typically the external supplier and their abilities should be known. The operator does not need to interface directly with the external supplier, but should be provided with sufficient information to enable them to identify supplier abilities.
System	A competitive manufacturing system is that holistic combination of the process, plant and equipment, procedures and practices including the skills and work organisation of the workforce which make up the

RANGE STATEMENT

	productive organisation.

Unit Sector(s)

Unit Sector	CM Systems

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMS401A Ensure process improvements are sustained

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed to ensure that the gains which have been made by using improved methods, processes and equipment are sustained as the new base line/standard to the team's area of work and so prevent regression to former practices, or digression to less efficient practices.

Application of the Unit

Application of the unit	This unit applies to an environment where continuous improvement in a manufacturing enterprise is being undertaken. The team leader or other responsible person then facilitates and implements methods of ensuring that these improvements are sustained. Improvement initiatives can be made by any of any number of methods and by teams or individuals. The unit assumes that desired levels of performance or quality are known. The unit covers ensuring that team members implement the modified processes to ensure the improvements are sustained and opportunities taken to suggest further improvements. This unit requires the application of skills associated with problem solving, initiative and enterprise, planning and organising in order to check and monitor the impacts of change. It also requires communication and teamwork in order to assess the impact of change in a team's area of work. Self management and learning will be used to continuously monitor change influences and adapt improvements according to new information and

	feedback.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Ensure corrective actions are implemented.	1.1. Liaise with relevant people associated with the anticipated corrective action 1.2. Ensure the supply of resources (equipment, modifications, consumables, people) 1.3. Check occupational health and safety (OHS) impacts of corrective action and take action in accordance with procedures if required 1.4. Ensure workforce has relevant skill level 1.5. Negotiate solutions with relevant people to allow

ELEMENT	PERFORMANCE CRITERIA
	implementation
	1.6. Supervise implementation of corrective action
	1.7. Monitor implementation of corrective action
	1.8. Make required adjustments
2. Verify systems support improvement	2.1. Ensure procedures reflect improvements
	2.2. Ensure training and assessment systems reflect improvements
	2.3. Liaise with relevant people to ensure their support of the new modified system/s
3. Audit the change	3.1. Determine an appropriate audit period/cycle
	3.2. Agree relevant measures/indicators for the improvement
	3.3. Measure performance at agreed times using agreed measures
	3.4. Investigate the cause/s of under performance
	3.5. Take appropriate corrective action to improve performance
	3.6. Reaudit the improvement on an agreed basis

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- communication/negotiation skills
- teamwork
- basic mathematics
- planning
- problem solving
- analysing.

Required knowledge:

- existing procedures
- modified procedures
- overall process of manufacturing relative to improvements being made
- appropriate measures of performance
- business performance goals sufficient to determine best measures of improved

REQUIRED SKILLS AND KNOWLEDGE

performance.

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements

The person will be able to point to improvements which have been made where they have been active in designing and implementing systems for sustaining the improvement.

What critical aspects of evidence are required to demonstrate competency in this unit?

Evidence of having sustained improvements in the workplace and of reviewing these improvements for their real impact.

In what context should assessment occur?

Assessment will need to occur in a workplace where improvements are occurring, or where specific improvement projects are undertaken for the purpose of providing evidence of competence (among other aims).

The unit may also be assessed on a project basis in a simulated environment.

Are there any other units which could or should be assessed with this unit or which relate directly to this unit?

This unit may be assessed concurrently with appropriate units on continuous improvement.

This unit relates to a team leader ensuring that their team sustains improvements. *MSACMS201A Sustain process improvements* is a lower level unit for a person's own area of responsibility.

What method of assessment should apply?

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment.

Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and

EVIDENCE GUIDE	
	colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence should be available from multiple small changes, or from a large change which has had multiple facets implemented over a period of some months.
What are the specific resource requirements for this unit?	Access to a workplace implementing competitive manufacturing strategies, or where improvement projects can be conducted and relevant records is required. No other specific resources are required.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Systems	Systems is used to mean any/all of the equipment, process, procedures and work practices that are used to produce the product. A term often used in this context is: • Kaizen - the philosophy of continual improvement, that every process can and should be continually evaluated and improved in terms of time required, resources used, resultant quality, and other aspects relevant to the process.

RANGE STATEMENT	
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
Improvement	Improvement procedures in some enterprises are also known by baka-yoke which is a manufacturing technique of preventing mistakes by designing the manufacturing process, equipment and tools so that an operation literally cannot be performed incorrectly. An attempt to perform incorrectly, as well as being prevented, is usually met with a warning signal of some sort. The term poka-yoke is sometimes referred to as a system where only a warning is provided. Improvements may be sustained by use of technology so that it is impossible to do the job any other way. However, improvements may also be sustained by changes to process or procedures or other changes to the manufacturing system which, if followed, will sustain the change and this unit may be applied to all these situations.
Measuring performance	Measuring performance is not used literally and may mean the personal taking of measurements, or it may mean arranging for measurements to be taken/made by appropriate personnel. The interpretation of the measurements however is to be undertaken personally.

Unit Sector(s)

Unit Sector	CM Systems

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT220A Apply quick changeover procedures

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed to do quick changeovers.

Application of the Unit

Application of the unit	In a typical scenario, an organisation is pursuing quick changeover as one of its competitive manufacturing tools. This unit covers the carrying out of these quick changeovers and also recommending improvements within the scope and authority of the individual's job. Particular technical skills may also be required in some manufacturing sectors and for some jobs. These will be contained in the relevant industry Training Package. This unit requires the application of skills associated with applying quick changeover procedures including the planning and organising of own work, identifying problems and making suggestions for improvement of procedures.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for changeover	1.1. Determine when changeover will be required 1.2. Obtain all required tools/parts/materials for changeover 1.3. Organise process, and tools/parts/materials ready for changeover 1.4. Identify role of others in quick changeover
2. Make quick changeover	2.1. Plan changeover according to quick changeover principles 2.2. Liaise and work with relevant people in quick changeover 2.3. Complete changeover according to <i>procedures</i> 2.4. Check output meets specification 2.5. Debrief with all relevant stakeholders 2.6. Note any steps which cause a problem 2.7. Recommend changes to problematic steps
3. Improve Occupational Health and Safety (OHS)	3.1. Identify hazards to self or others in all steps/actions 3.2. Determine risks from each hazard 3.3. Identify actions which may be performed in a more ergonomic manner 3.4. Recommend changes to improve OHS

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- ability to determine/predict when a changeover will occur
- communication
- teamwork
- appropriate tools/process skills for set-up

Required knowledge

- principles of quick changeover
- relevant procedures
- purposes/requirements of changeover
- methods of recommending changes
- quality requirements for products
- minimisation of changeover scrap

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements	The person will effectively and routinely carry out quick changeovers, in liaison with other relevant personnel, and will make recommendations for improving the changeover.
What are the specific resource requirements for this unit?	Access to an organisation using quick changeovers.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of routine positive participation in quick changeover.
In what context should	Assessment will need to occur in an organisation using quick changeover or a suitable simulation, for example, in a

EVIDENCE GUIDE	
assessment occur?	workshop.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be assessed concurrently with relevant technical process units. This unit is related to: <i>MSACMT620A Develop quick changeover procedures</i> which covers the manager/design area for quick changeover.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence should be available of routinely participating in quick changeovers.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

RANGE STATEMENT	
Changeover	Changeover may refer to an exchange of dies/tools (traditional), or a change between batches, or between campaigns. It may be any quantum equipment/process change to produce a different product. Changeover is sometimes referred to as SMED which is a more extreme form where SMED is an abbreviation for Single Minute Exchange of Die; literally, changing a die on a forming or stamping machine in a minute or less; broadly, the ability to perform any set-up activity in a minute or less of machine or process downtime; the key to doing this is frequently the capability to convert internal set-up time to external set-up time; variations on SMED include: • Single-digit set-up: performing a set-up activity in a single-digit number of minutes, i.e. fewer than ten. • OTED: One Touch Exchange of Die; literally, changing a die with one physical motion such as pushing a button; broadly, an extremely simple procedure for performing a set-up activity. Set-up time - work required to change over a machine or process from one item or operation to the next item or operation ; can be divided into two types: • internal set-up work that can be done only when the machine or process is not actively engaged in production; OR • external set-up work that can be done concurrently with the machine or process performing production duties. While the term die is the traditional term, competitive manufacturers who require changeover, but where dies are not used or are less significant, have applied this to a range of other changeovers. This unit may not be applicable to a totally continuous operation producing only the one product, or simultaneous range of products. This is not applicable to a maintenance/ PVI shutdown as experienced by the continuous process manufacturers. However, where there is continuous manufacturing on a campaign basis, it may be applied to the changeover between campaigns or similar changeovers.
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets,

RANGE STATEMENT

	temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT221A Apply Just in Time (JIT) procedures

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed to work in a JIT system.

Application of the Unit

Application of the unit	In a typical scenario, a person working in an organisation following JIT will need to follow procedures which are specific to JIT such as the controlled flow of material (eg the use of kanban, and elimination of waste etc). This will involve the operator in the application of the pull system to their job and the authorisation of product/material flows, in accordance with procedures and their level of authority This unit requires the application of skills associated with planning and organising and self management to deliver product on demand using necessary tools, equipment and processes to meet production requirements. The unit also requires an ability to recognise and act on problems that may interfere with meeting production demands.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Respond to indicator of demand	1.1. Identify pull of product through work role 1.2. Recognise indicator of <i>flow authorisation</i> 1.3. Identify production required
2. Make products to demand	2.1. Make product as required by <i>ticket</i> 2.2. Identify any factors likely to prevent demand being satisfied in own work or work of the team 2.3. Take action in accordance with procedures
3. Update demand information as required	3.1. Record information on ticket to procedures as required 3.2. Facilitate operation of flow authorisation as part of work
4. Recommend improvements	4.1. Examine the operation of the JIT system as it relates to own work 4.2. Identify areas for improvement 4.3. Identify any additional personal skill requirements to implement just in time procedures 4.4. Recommend improvements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- reading
- recording
- communication
- planning
- problem solving

Required knowledge

- relevant flow authorisations, kanban for the job
- JIT methods relevant to job
- procedures for recommending improvements
- technical competence to do the job

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment requirements

The person will work in a JIT system, using it to authorise their own work, facilitating its operation and recommending improvements.

What are the specific resource requirements for this unit?

Access to an organisation using JIT.

What critical aspects of evidence are required to demonstrate competency in this unit?

Evidence of the routine and smooth integration of JIT into their daily work

In what context should assessment occur?

Assessment will need to occur in an organisation using JIT.

Are there any other units

This unit should be assessed concurrently with relevant

EVIDENCE GUIDE	
which could or should be assessed with this unit or which relate directly to this unit?	technical units dealing with the manufacture of product, or other units where JIT is relevant. This unit is related to: • <i>MSACMT421A Facilitate a Just in Time (JIT) system, and</i> • <i>MSACMT621A Develop a Just in Time (JIT) system</i> which cover the intermediate and highest skill levels in CM respectively.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	This competency should be a routine part of the job and there should be evidence of it being consistently and routinely applied.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

RANGE STATEMENT	
Just in time (JIT)	Just in time (JIT) is a production scheduling concept that calls for any item needed at a production operation - whether raw material, finished item, or anything in between, to be produced and available precisely when needed, neither a moment earlier nor a moment later.
Flow authorisation	A system which authorises the worker to make a product without reference to another authority.
Indicator of demand	An indicator of demand may be kanban bin, ticket or similar, or may be some other indicator of demand pull. In some plants, this may also include authorisation using SCADA software.
Ticket	A ticket may be a kanban or some other record, paper or electronic which constitutes the whole or part of the flow authorising system. Where kanban bins are used, there may be no other record.
Kanban	Kanban is a card or sheet used to authorize production or movement of an item. When fully implemented, kanban operates according to the following rules: • all production and movement of parts and material take place only as required by a downstream operation, ie all manufacturing and procurement are ultimately driven by the requirements of final assembly or the equivalent • the specific tool which authorizes production or movement is called a kanban. The word literally means card or sign, but it can legitimately refer to a container or other authorizing device. Kanban have various formats and content as appropriate for their usage (eg kanban for a vendor is different than a kanban for an internal machining operation). Kanban is typically applied to batch type operation and the production is measured in units produced. In continuous manufacturing organisations, production is measured in terms of production rate (eg kg/h, tonne/day) and rate is increased/decreased according to the flow authorisation which may be a kanban (eg ticket, order from a supplier) or may be a SCADA signal from a remote facility (eg customer tank) saying that resupply is required or similar.
SCADA	System Control and Data Acquisition (SCADA) is a

RANGE STATEMENT	
	general term applied to a number of systems which automatically collect critical process data, perform required mathematical manipulations on it and then make control decisions and/or give required information personnel for action.
Pull system	A pull system is a manufacturing planning system based on making on demand as opposed to a push system based on making for stock using a sales forecast.
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT230A Apply cost factors to work practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed for an individual to identify cost components and to be able to determine in general terms the cost impacts of alternative actions.

Application of the Unit

Application of the unit	In a typical scenario, a person is required to contribute to and be involved in the assessment of cost factors in their work. This may be done individually or in a team environment. The person is able to assess the relative costs of the alternatives and use this as one of the key factors in making decisions. Decisions are made within the scope of the employee's authority and according to procedures. Typical decisions include those that contribute to the efficient organisation of own work and the improvement of production time and cycle times. This unit requires the application of skills associated with problem solving to identify cost factors and cost implications of own work and self management to apply cost effective practices.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify in own work area major cost components of product or process	1.1. Identify <i>cost components</i> in the product or <i>process</i> in own work area 1.2. Recognise the impact of current or alternative actions on costs
2. Identify constraints to cost efficiency	2.1. Identify required production/process rate and major costs 2.2. Identify costs factors under the control of the individual or team 2.3. Relate identified costs factors to impact on <i>overall cost</i> of production/process 2.4. Identify cost factors that are a constraint to cost efficiency in own work area
3. Apply cost efficient work practices	3.1. Express the implications of possible actions/changes to improve cost efficiency in simple financial terms 3.2. Identify non-financial implications of proposed changes in discussion with relevant people

ELEMENT	PERFORMANCE CRITERIA
	3.3. Select actions which minimise overall costs 3.4. Monitor actions to ensure cost efficiency in own work area is maintained

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- basic numeracy
- problem solving
- communication

Required knowledge

- cost components of products made
- costs concepts such as expense and income
- major cost contributors to product (eg energy)
- the difference between internally and externally controlled costs
- difference between overhead, labour and consumables

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements	The person will as part of their routine decision making aim to minimise costs. There should be evidence of their doing so.
What are the specific resource requirements for this unit?	Access to a workplace implementing competitive manufacturing strategies. No other specific resources are required.
What critical aspects of evidence are required to demonstrate competency	Evidence of being able to identify costs factors

EVIDENCE GUIDE	
in this unit?	relevant to an individual's job. Evidence of having made appropriate decisions to minimise overall costs.
In what context should assessment occur?	Assessment will need to occur in a workplace or by use of a work based case study.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be assessed concurrently with appropriate units on continuous improvement.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence should be available over a period of time or from more than one process or product.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold

RANGE STATEMENT

italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Cost components	Cost components include fixed and variable costs such as power/energy, materials, plant and equipment, production or process time including impact on salary and wages, office expenses such as telephone and government taxes and charges.
Process	Process may include a production, maintenance, logistics or office process in a manufacturing environment.
Overall cost	Overall cost may include the assessment of negative and positive financial implications. It also includes negative long term issues, such as Occupational Health and Safety (OHS), environmental and regulatory issues.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT231A Interpret product costs in terms of customer requirements

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed for a person to be able to identify the major cost components of their product/s, the basic relationship of these to customer benefits and use this to help minimise waste (defined as anything not delivering a customer benefit). It has a different focus to <i>MSACMT230A Apply cost factors to work practices</i> which focuses on costs in isolation whereas this unit regards all costs not directly leading to customer benefit as waste. It may apply to all employees.

Application of the Unit

Application of the unit	In a typical scenario, an employee uses their understanding of the customer's requirements of the product or process being undertaken as the basis for investigating processes to identify waste sources and then take actions relevant to their level of competency and authority to reduce this waste. It requires and understanding of both the cost factors in the products they make and also the benefits which the customer derives from the product. This competency may be performed individually or in a team based environment. This unit requires the application of skills associated with analysis and problem solving to identify waste and determine ways to minimise waste. This unit requires initiative and enterprise and application of learning in concepts of waste and waste minimisation

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify cost components deriving from customer benefits and other costs	1.1. Identify <i>customer features/benefits</i> in product or process being undertaken 1.2. Identify cost components which deliver customer features/benefits and those which don't 1.3.
2. Compare required performance of product or process steps with actual performance	2.1. Identify <i>performance</i> required to meet customer needs in own work and that of team 2.2. Identify actual performance 2.3. Compare cost components of products or process with current <i>customer-related targets</i> 2.4. Separate costs components into those that

ELEMENT	PERFORMANCE CRITERIA
	contribute to customer features/benefits and those that do not contribute 2.5. Determine <i>non-contributing cost components</i> which are under control of the individual or team
3. Minimise waste	3.1. Recommend changes to eliminate or reduce waste 3.2. Adopt changes which minimises waste 3.3. Monitor effect of changes to ensure gains are made against customer features/benefits

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- numeracy
- analysis
- communication and literacy

Required knowledge

- ability to access company information about:
 - customer features/benefits
 - cost components of products made
 - costs concepts such as expense and income
 - major cost contributors to product (eg energy)
- the difference between internally and externally controlled costs
- difference between overhead, labour and consumables

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

EVIDENCE GUIDE	
Overview of assessment requirements	An employee will as part of their everyday routine aim to minimise waste and establish a focus in their work on meeting targets that contribute to customer features/benefits.
What are the specific resource requirements for this unit?	Access to a workplace implementing competitive manufacturing strategies. No other specific resources are required.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of being able to identify cost factors in employees work in terms of customer features/benefits and having made appropriate recommendations to reduce waste. Evidence of implementing changes which reduce waste.
In what context should assessment occur?	Assessment will need to occur in a workplace or through a project in a simulated work environment.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be assessed concurrently with appropriate units on continuous improvement.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence should be available from several episodes of analysis and implementation of recommendations to reduce waste and improve customer features/benefits.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Customer features/benefits	Customer features/benefits are those characteristics of the product or service which add value to the customer, this value may be assessed in financial or features terms. The customer may be internal or external.
Performance	Performance may be thought of as the rate of output of the plant compared to the rate required to meet demand. Performance might also be thought of in terms of takt where takt time is the allowable time to produce one product at the rate and quality customers are demanding it. This is NOT the same as cycle time, which is the normal time to complete an operation on a product (which should be less than or equal to takt time).
Customer-related targets	Customer-related targets are the internally set financial and operational targets that contribute to meeting customer features/benefits.
Non-contributing cost components	Some costs incurred make a direct contribution to customer features/benefits. These costs continue to need to be incurred (although they may be minimised) in order to gain the customer feature/benefit. Other costs do not contribute to customer features/benefits (non-contributing cost components) and either must be maintained such as regulatory compliance and occupational health and safety (OHS) costs while other costs are not required and do not contribute to customer features and so should be eliminated if possible. This is also defined in terms of waste - see below.
Waste	Waste (also known as muda in the Toyota Production System and its derivatives) is any activity which does not contribute to customer benefit/features in the product.

RANGE STATEMENT	
	Within manufacturing, categories of waste include: • excess production and early production • delays • movement and transport • poor process design • inventory • inefficient performance of a process • making defective items. Waste for this unit may include activities which do not yield any benefit to the organisation or any benefit to the organisations customers.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT240A Apply 5S procedures in a manufacturing environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed for an employee to apply 5S procedures (a structured approach to housekeeping) to their own job and work area.

Application of the Unit

Application of the unit	In a typical scenario, an organisation has decided to embark on a competitive manufacturing strategy and as part of this has adopted the philosophy of 5S as one of the tools to move down this path. The employee needs to apply 5S to their job and work area and maintain the housekeeping and other standards set by 5S. This unit requires the application of skills associated with planning and organising, problem solving and self management, in order to identify and implement 5S housekeeping practices.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Sort needed from un-needed	1.1. Identify all <i>items</i> in the work area 1.2. Distinguish between essential and non-essential items 1.3. Place any non-essential item in a appropriate place, not in the work area 1.4. Regularly check that only essential items are in the work area
2. Set the workplace in order	2.1. Identify the best location for each essential item 2.2. Place each essential item in its assigned location 2.3. After use immediately return each essential item to its assigned location 2.4. Regularly check that each essential item is in its assigned location
3. Shine the work area	3.1. Keep the work area clean and tidy at all times 3.2. Conduct regular housekeeping activities during shift 3.3. Ensure the work area is neat, clean and tidy at both beginning and end of shift
4. Standardise activities	4.1. Follow <i>procedures</i> 4.2. Follow checklists for activities where available 4.3. Keep the work area to specified standard

ELEMENT	PERFORMANCE CRITERIA
5. Sustain the 5S system	5.1. Clean up after completion of job and before commencing next job or end of shift 5.2. Identify situations where compliance to standards is unlikely and take actions specified in procedures 5.3. Inspect work area regularly for compliance to specified standard 5.4. Recommend improvements to lift the level of compliance in the workplace

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication
- planning
- organising
- prioritising
- reading and interpretation
- recording
- problem solving

Required knowledge

- meaning and application of 5S to their job
- principles of efficient workplace organisation
- purposes of 5S
- procedures relevant to job
- methods of making/recommending improvements

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment

EVIDENCE GUIDE guidelines for this training package.	
Overview of assessment requirements	There should be evidence that the employee is routinely applying 5S principles in their routine work and that they are aware of why 5S is important.
What are the specific resource requirements for this unit?	Access to a plant implementing/practising 5S. No other specific resources re required.
What critical aspects of evidence is required to demonstrate competency in this unit?	Evidence of routine practice of 5S as part of their job.
In what context should assessment occur?	This unit needs to be assessed in a workplace practising, or beginning to implement, 5S.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit could be assessed concurrently with a unit on continuous improvement, or in conjunction with a technical unit related to the process. This unit differs from <i>MSACMT440A Lead 5S in a manufacturing environment</i> which applies to those who also need to help others apply 5S.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	There needs to be evidence that this is a consistent part of their routine work life, and as such, evidence is needed over an extended period.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

5S	5S is a system of work organisation originally developed in Japan based around housekeeping principles. A close translation of the five stages in the housekeeping approach is: • sort • set in order • shine • standardise • sustain
Sort	Sort involves keeping only what is absolutely necessary for the production process on the production floor. As a first step, clear the work area of all non-essential equipment and materials. Remove anything either not required to produce the product or adjust the machine during the process. This helps to get rid of a 'just in case' mentality.
Items in work area	Items in work area include tools, jigs/fixtures, materials/components, plant and equipment, manuals, personal items (such as bags, lunch boxes, posters), safety equipment and personal protective equipment, and any other item which happens to be in the work area.
Set in order	After removing unnecessary materials, the remaining materials must be those that are required immediately for either the machine or the job at hand. All of these materials/change/parts etc must have an assigned location on the production floor. Locations should be clearly marked and labelled to show what belongs where.

RANGE STATEMENT	
Shine	The work area should be kept clean at all times. Cleaning must be carried out to a regular daily schedule against allowed time and, on most occasions, at the end of a job.
Standardise	Once 5S is established, standardising activities help maintain the order and the housekeeping standards. Standardising may use procedures and checklists developed from a procedure.
Sustain	Sustain means making sure that daily activities are completed every day regardless of circumstance. A job should always be cleaned up once finished regardless of the urgency of the next job. Informal inspections should be done often, at least weekly. Formal inspections of each area should be carried out at least monthly. Specific actions should be followed up. This will generate continuous improvement.
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the operation of the plant. They may be written, verbal, computer based or in some other form. For the purposes of CM, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT250A Monitor process capability

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills required for gathering of data and the interpretation of simple information to determine the compliance of the process and the taking of action as defined by the procedures where the information reveals the process is out of control parameters.

Application of the Unit

Application of the unit	In a typical scenario an organisation has adopted either six sigma or statistical process control/ three sigma as a means of determining and improving the capability of their process. The team member is involved in this in collecting specified data and performing specified manipulations to the data (typically by plotting on a chart or by entering into a specified computer program). The information is typically presented to the team member in terms of graphs/charts which they are expected to interpret at a basic level and then take action in accordance with procedures to restore the process to being under control parameters. This unit requires the application of skills associated with entering and monitoring production information and requires initiative, enterprise and problem solving in identifying production variations and making improvement recommendations.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Collect and process data	1.1. Take specified measurements/readings as required 1.2. Enter data onto log/into computer or other record 1.3. Manipulate and/or chart data as required by <i>procedures</i> 1.4.
2. Identify variations that are not random and take action	2.1. Examine chart and/or reliability information 2.2. Distinguish between <i>random variations</i> and those with an identifiable cause 2.3. Take action specified in <i>procedures</i> when a variation with an <i>identifiable cause</i> occurs
3. Assist in process improvement	3.1. Collect data for process capability improvement trials as directed 3.2. Make recommendations for improvement as required 3.3. Implement revised capability monitoring

ELEMENT	PERFORMANCE CRITERIA
	<i>procedures</i> as required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- problem solving
- statistical control
- planning
- communication

Required knowledge

- data collection methods
- data processing techniques required
- basic variability and normal distribution
- recognition of identifiable causes in accordance with procedures
- causes of different types of identifiable causes as defined by procedures
- actions to be taken for the different causes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements

The person performing this unit would be expected to collect the correct data at the required frequency, perform the required manipulations on the data and then recognise assignable causes and take the required action (which may just be reporting).

What are the specific resource requirements for this unit?

Access to a work place utilising either 6 sigma or 3 sigma is required. Where it is necessary to use synthetic information for assessment purposes, then a

EVIDENCE GUIDE	
	bank of such information should be created.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence should be available of data collected and processed. There may also be evidence of assignable causes recognised and action taken. There should not be evidence of assignable causes ignored.
In what context should assessment occur?	Assessment will need to occur in a workplace implementing either 3 sigma or 6 sigma.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be assessed concurrently with a continuous improvement or a quality unit. This unit is related to: • <i>MSACMT450A Undertake process capability improvements, and</i> • <i>MSACMT650A Determine and improve process capability</i> which apply to the intermediate and highest skill levels in CM respectively. It may also be appropriate to relate this unit to <i>MEM15001B Perform basic statistical quality control</i> and possibly also <i>MEM15008B Perform advanced statistical quality control</i> where the person is required to perform statistical manipulations (i.e. where these are not done automatically for the person eg by a computer system).
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace.

EVIDENCE GUIDE	
	The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence of the routine collection and processing of data should be available from the workplace. Consistent interpretation of information should also be available from the workplace, although this may need to be supplemented with synthetic data as above. The interpretation of multiple assignable causes is more important than the consistent interpretation of one type of assignable cause.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Six sigma	Six sigma is a process improvement methodology based on statistical process control with six sigma limits which equates to 3.4 defects per million opportunities for each product or service transaction. Six sigma is also often used as a general term covering a competitive manufacturing approach. Six sigma training typically covers several units of competency in this Training Package.
Three sigma	Three sigma includes statistical process control with three sigma limits which equates to 3 defects per thousand opportunities for each product or service transaction.
Procedures	Procedures includes all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form.

RANGE STATEMENT	
	For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
Random variation	Random variation is the term used in statistical control to refer to those variations for which no cause can be found.
Identifiable cause	Also referred to as an 'assignable cause' or a 'special cause' are those variations for which a cause can be found and so the cause of the variation eliminated.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT251A Apply quality standards

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is based on <i>LMTQAGN01A Apply quality standards</i>. This unit covers the skills and knowledge required to apply quality standards to work operations in a manufacturing enterprise.

Application of the Unit

Application of the unit	In a typical scenario, an employee is expected to take responsibility for the quality of their own work, and to take actions specified in the procedures and within the scope of their job and authority to ensure that quality standards are met. This unit requires the application of skills associated with interpreting and applying workplace standards and identifying and addressing problems that interfere with quality outcomes. The unit requires initiative, enterprise and self management to ensure quality standards are achieved.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assess own work	1.1. Continuously check completed work against workplace standards relevant to the operation being undertaken 1.2. Demonstrate an understanding of how the work activities and completed work relate to the next production process or processes and to the final products concerned 1.3. Identify and isolate faulty pieces/components or final products/batches 1.4. Record and/or report the faults and any identified causes to the supervisor concerned where required in accordance with workplace <i>procedures</i>
2. Assess quality of received component parts/materials	2.1. Continuously check received materials, component parts or final products against workplace standards and specifications for conformance 2.2. Demonstrate an understanding of how the received materials or component parts relate to the current operation and how they contribute to the final quality of the product 2.3. Identify and isolate faulty material or component parts related to the operator's work

ELEMENT	PERFORMANCE CRITERIA
	2.4. Record and/or report the faults and any identified causes to the supervisor concerned where required, in accordance with workplace procedures 2.5. Identify causes of any identified faults and take corrective action specified in the workplace procedures
3. Measure parts/materials	3.1. Measure materials, component parts or products, as required, using the appropriate measuring instruments in accordance with workplace procedures
4. Record information on production indicator	4.1. Record basic information on the quality and other indicators of production performance in accordance with workplace procedures
5. Investigate causes of quality deviations	5.1. Investigate and report causes of deviations from specified quality standards for materials, component parts or final products, as required, using the appropriate measuring techniques in accordance with workplace procedures 5.2. Recommend suitable preventative action based on workplace quality standards and the identified causes of deviations from specified quality standards of materials, component parts or final products

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- interpret work instructions, specifications, standards and patterns appropriate to the assessee's work
- carry out relevant visual inspections of materials, component parts and final products
- carry out relevant physical/chemical measurements or tests
- maintain accurate work records in accordance with procedures
- carry out work in accordance with OHS policies and procedures
- meet work specifications

REQUIRED SKILLS AND KNOWLEDGE

- communicate effectively within defined workplace procedures
- interpret and apply defined procedures

Required knowledge

- relevant quality standards, policies and procedures
- relevant production processes, materials and products
- basic characteristics of materials used in the relevant production processes
- safety and environmental aspects of relevant production processes
- relevant measurement techniques and quality checking procedures
- workplace procedures
- reporting procedures

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements

Competence should be demonstrated in the appropriate work context dependent on the level of responsibility being exercised.

Work is assessed in accordance with enterprise quality standards, relevant statutory requirements, organisation insurance requirements, OHS legislation, manual handling procedures and relevant health regulations.

What are the specific resource requirements for this unit?

Access to real or appropriately simulated production situations including areas, materials, equipment, and information on work specifications/patterns, relevant safety procedures and regulations, quality standards, organisation procedures and customer requirements.

What critical aspects of evidence are required to demonstrate competency in this unit?

Assessment must confirm appropriate knowledge and skills to:

- interpret, relevant work instructions, standards and specifications appropriate to the assessee's work
- check and measure the relevant quality parameters
- interpret the results of quality checks in terms of

EVIDENCE GUIDE	
	specifications, patterns and work standards • take required action where standards of materials, component parts, final product or work processes are found to be unacceptable • maintain accurate records.
In what context should assessment occur?	Assessment may occur on the job or in an appropriately simulated environment.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be assessed in conjunction with the other relevant units. In some contexts it may be necessary to use specific measuring equipment to check the quality and this may require competence in using that equipment. Where that is the case, it is appropriate to assess this unit in conjunction with that other relevant unit.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Applies underpinning knowledge and skills when: • interpreting work instructions, specifications, standards and patterns appropriate to the assessee's work • describing consequences • completing tasks • identifying improvements within defined procedures

EVIDENCE GUIDE

	• applying safety precautions relevant to the task • assessing operational capability of specified equipment used and work processes. Shows evidence of application of relevant workplace procedures including: • quality procedures • hazard policies and procedures including codes of practice relevant to their job within defined procedures • job procedures and work instructions • waste, pollution and recycling management processes within defined procedures • action taken promptly, accidents and incidents reported in accordance with statutory requirements and enterprise procedures • recognises and adapts appropriately to cultural differences in the workplace, including modes of behaviour and interactions among staff and others in accordance with workplace procedures • work completed systematically with attention to detail without damage to goods, equipment or personnel.
What evidence is required for demonstration of consistent performance?	Applies underpinning knowledge and skills when: • interpreting work instructions, specifications, standards and patterns appropriate to the assessee's work • describing consequences • completing tasks • identifying improvements within defined procedures • applying safety precautions relevant to the task • assessing operational capability of specified equipment used and work processes. Shows evidence of application of relevant workplace procedures including: • quality procedures • hazard policies and procedures including codes of practice relevant to their job within defined procedures • job procedures and work instructions • waste, pollution and recycling management

EVIDENCE GUIDE

	processes within defined procedures • action taken promptly, accidents and incidents reported in accordance with statutory requirements and enterprise procedures • recognises and adapts appropriately to cultural differences in the workplace, including modes of behaviour and interactions among staff and others in accordance with workplace procedures • work completed systematically with attention to detail without damage to goods, equipment or personnel.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Work site environment	Work may be conducted in a large scale production or small business situation.
Quality parameters	Quality parameters may include: • finish • size • durability • product variations • materials • alignment • colour • damage and imperfections.
Quality checks	Quality checks may include: • visual inspection • physical measurements • chemical tests • checks against patterns, templates and guides.

RANGE STATEMENT	
Measure	Measure includes those measurements which may be taken by the employee in the work place/at their work station.
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the operation of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
Indicators of production performance	Indicators of production performance include things like number of items/production rate, delays and causes of delays (where known) and other information as specified in the procedures.
Data entry/recording	Data entry/recording may include: • keyboard • written (including ticks or signs) • verbal.
Sources of information/documents	Sources of information/documents may include: • quality and Australian standards and procedures • work instructions, patterns, designs and recipes • organisation work procedures • manufacturer instructions for materials and equipment • organisational or external personnel • customer requirements.
Investigate and report	Investigate and report in this unit is used to mean following set procedures defined for such investigations. These procedures could include verbal instructions, documented procedures or other quality procedures as implemented within an enterprise or work environment.
Workplace context	Work organisation procedures and practices relating to the manufacture and quality outcomes for products. Conditions of service, legislation and industrial

RANGE STATEMENT	
	agreements including: • workplace agreements and awards • Federal or State/Territory legislation • standard work practice.
Reporting/communication	Reporting/communication may include verbal and written communication in accordance with organisational policies and procedures. Communication may be oral, written or visual and can include simple data.
Being responsible for the maintenance of own work quality	Being responsible for the maintenance of own work quality may include being required to contribute to the quality improvement of team or section output, where necessary, in accordance with workplace procedures. Safety, environmental, housekeeping and quality are as specified by materials/machine/equipment manufacturers, regulatory authorities and the enterprise.
Applicable regulations and legislation	Applicable regulations and legislation may include: • Occupational Health and Safety (OHS) legislation relevant to workplace activities • workers' compensation legislation.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT260A Use planning software systems in manufacturing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed to access planning software (often known as ERP, MRP, MRPII, and often by its brand name, such as SAP) to make routine business decisions required of the person as a regular part of their job.

Application of the Unit

Application of the unit	In a typical scenario, an organisation has introduced a planning software system which the employees now must interface with. At its simplest level this is just an information system. However when fully implemented the planning software system can be used as a tool for decision making. This unit requires the application of communication, planning, and problem solving associated with using planning software in own work.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Use interface	1.1. Use keyboards, track ball/mouse and monitor and/or other peripherals to access system 1.2. Navigate through the system and the screens 1.3. Acknowledge messages 1.4. Input and output information in the required format
2. Access information	2.1. Obtain relevant data and information from the system 2.2. Identify the status of items in the <i>value chain</i> 2.3. Access historical data and information 2.4. Interpret information and prioritise actions
3. Take appropriate actions in accordance with procedures	3.1. Take actions in response to information 3.2. Follow up as appropriate to ensure anticipated results have occurred 3.3. Record adjustments and variations according to procedures 3.4. Identify any learning needs to use planning software and seek appropriate support

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- keyboarding/mousing
- communication
- teamwork
- problem solving

Required knowledge

- technical knowledge and skills needed to operate process
- hierarchy of planning software system and operation
- information available from and business activities exercised by/through the planning software system

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements

The employee will routinely use the relevant parts of the planning software system for their job.

What are the specific resource requirements for this unit?

Access to an organisation using a planning software system.

What critical aspects of evidence are required to demonstrate competency in this unit?

Evidence of routine use of planning software as part of their job is required.

In what context should assessment occur?

Assessment needs to occur in a workplace using a planning software system or a simulation system.

Are there any other units which could or should be assessed with this unit or which relate directly to this

This unit should be assessed concurrently with relevant technical units for the process.
This unit covers the lower skill levels of using planning

EVIDENCE GUIDE	
unit?	software. <i>MSACMT460A Use planning software systems in manufacturing</i> and <i>MSACMT660A Develop the application of enterprise systems in manufacturing</i> cover the intermediate and highest skill levels in the CM respectively.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence of routine use over an extended period should be available. Planning software systems will typically log all interactions with it. Interrogation of the planning software system will therefore provide evidence of the operator's use of it. Actions taken may also be accessible from the planning software system itself, or may need other evidence available from the process.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Planning software	Planning software is a general term applied to a number of software systems which integrate a range of business information such as finance, logistics maintenance and production. It is frequently referred to by names such as ERP, SAP, MRP/MRP II.
Value chain	Competitive manufacturing organisations encompass the entire production system, beginning with the customer, and includes the product sales outlet, the final assembler, product design, raw material mining and processing and all tiers of the value chain (sometimes called the supply chain). Any truly 'competitive' system is highly dependent on the demands of its customers and the reliability of its suppliers. No implementation of competitive manufacturing can reach its full potential without including the entire 'enterprise' in its planning.
Procedures	Procedures includes all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT261A Use SCADA systems in manufacturing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed by an employee to interact with a System Control and Data Acquisition (SCADA) system as part of their job.

Application of the Unit

Application of the unit	In a typical scenario, an organisation has introduced a SCADA system which employees now must interface with. The employee will need to access this system as part of their routine and take actions based on the information they get from the SCADA system in accordance with procedures. This unit requires the application of skills associated with using communication tools and technology for management of own work, planning and problem solving.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Use operator interface	1.1. Use keyboards, track ball, monitor and/or stand alone controllers to access/interrogate system 1.2. Find all relevant screens and information 1.3. Acknowledge messages 1.4. Input and output information
2. Use information	2.1. Obtain data and information from the SCADA as required, including process, <i>supply</i> and <i>product</i> chain data 2.2. Interpret data and information as required by own job 2.3. Find and use relevant historical data and information 2.4. Use manufacturer manuals or specifications as required to expand knowledge of SCADA system relevant to own work 2.5. Determine and prioritise required actions
3. Make required changes in accordance with procedures	3.1. Adjust production/process in response to SCADA information 3.2. Record adjustments and variations to specifications/ schedules and report to appropriate personnel 3.3. Seek feedback and information on adjustments to further improve procedures where required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• keyboarding/mousing • communication • teamwork • problem solving
Required knowledge
• technical knowledge and skills needed to operate process • hierarchy of SCADA system and operation • information available from and controls exercised by/through the SCADA system

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.	
Overview of assessment requirements	The employee will routinely use the relevant parts of the SCADA system for their job.
What are the specific resource requirements for this unit?	Access to an organisation using a SCADA system.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of routine use of SCADA as part of their job is required.
In what context should assessment occur?	Assessment needs to occur in a workplace using a SCADA system or using a SCADA simulation program.
Are there any other units which could or should be assessed with this unit or which relate directly to this	This unit should be assessed concurrently with relevant technical units for the process.

EVIDENCE GUIDE	
unit?	This unit covers the lowest skill level aspects of SCADA. <i>MSACMT461A Facilitate SCADA systems in manufacturing team or work area</i> and <i>MSACMT660A Develop the application of enterprise systems in manufacturing</i> cover the intermediate and highest skill levels of SCADA in CM respectively.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence of routine use over an extended period should be available. SCADA systems will typically log all interactions with it. Interrogation of the SCADA system will therefore provide evidence of the operator's use of it. Actions taken may also be accessible from the SCADA system itself, or may need other evidence available from the process.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. **Bold**

RANGE STATEMENT

italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

System Control and Data Acquisition (SCADA)	System Control and Data Acquisition (SCADA) is a general term applied to a number of systems which automatically collect critical process data, perform required mathematical manipulations on it and then make control decisions and/or give required information to personnel for action. In the continuous manufacturing sector, the SCADA system is sometimes integrated into other sophisticated computer control systems such as Distributed Control System (DCS) and indeed these systems do merge in advanced systems. These organisations may simply refer to their SCADA as the DCS or other similar term (such as the proprietary name of the computer system). SCADA systems may provide information from outside of the process, such as stock/material levels in a customer plant and/or available supply, supply rates and pricing from a supplier plant. This information may all be accessed by the SCADA system and the employee using it in order to make production rate and other control decisions (either automatically or human assisted) about their own process.
Supply and product chains	The supply chain is all suppliers in the chain from the initial raw material up to the current step in the manufacturing process. The product chain is all steps after the current step up to the final customer. Competitive manufacturing organisations encompass the entire production system, beginning with the customer, and includes the product sales outlet, the final assembler, product design, raw material mining and processing and all tiers of the value chain (sometimes called the supply chain). Any truly 'competitive' system is highly dependent on the demands of its customers and the reliability of its suppliers. No implementation of competitive manufacturing can reach its full potential without including the entire 'enterprise' in its planning.
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets,

RANGE STATEMENT

	temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT280A Undertake root cause analysis

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed to undertake root cause analysis (RCA) by any person. This will often be done by people working in a team. This unit also covers the competencies needed by operators to contribute to an advanced maintenance strategy using RCA coupled with diagrams and charts.

Application of the Unit

Application of the unit	In a typical scenario, the employee works in an organisation which is applying competitive manufacturing strategies. This involves the operator 'owning' their process, taking responsibility for it, undertaking root cause analysis of problems and generally contributing to increasing the uptime and general Overall Equipment Efficiency (OEE). This unit requires an ability to seek and apply information from a variety of sources in order to inform problem solving analyses. Initiative and enterprise is also required to identify quick fix and permanent solutions to problems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Recognise problems	1.1. Identify equipment/plant characteristics indicative of a problem 1.2. Identify process conditions/product characteristics indicative of a problem 1.3. Use appropriate techniques/charts to define the problem
2. Implement quick fix	2.1. Recommend/implement a quick fix within the scope of competency and authority 2.2. Use technology or processes relevant to the problem to implement quick fix
3. Determine root cause	3.1. Identify a range of possible causes 3.2. Gather information to eliminate/confirm causes 3.3. Construct a cause and effect diagram from available data 3.4. Seek assistance as required 3.5. Identify root cause
4. Develop permanent solution	4.1. Identify a range of methods of eliminating the root cause/ breaking the <i>cause tree</i> 4.2. Select the most appropriate solution

ELEMENT	PERFORMANCE CRITERIA
	4.3. Liaise with relevant people 4.4. Recommend or implement solution within the limits of competency and authority 4.5. Monitor impact of solution and make further recommendations as required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- analysis
- problem solving
- communication
- documenting

Required knowledge

- root cause analysis methodology
- indicators of a problem
- principles of the process sufficient to undertake a RCA and propose solutions
- use of relevant analysis tools (eg cause/effect diagrams, Pareto charts, 4W)

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide describes the underpinning knowledge and skills that must be demonstrated to prove competence. It is essential for assessment and must be read in conjunction with the performance criteria, the range statement and the assessment guidelines of the relevant training package

Overview of assessment requirements

The competent operator will be able to recognise problems in their process and undertake a root cause analysis, either alone or with assistance and propose permanent solutions.

What are the specific resource

Access to an organisation using root cause

EVIDENCE GUIDE	
requirements for this unit?	analysis.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of root cause analyses undertaken should be available.
In what context should assessment occur?	Assessment will need to occur in an organisation implementing root cause analysis or by simulation or project.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit could be assessed concurrently with other units dealing with the improvement of the process. This unit could be co-assessed (and delivered) with: • <i>MSAPMSUP390A Use structured problem solving tools</i> • <i>MEM15001B Perform basic statistical quality control.</i> This unit is related to <i>MSACMT281A Implement a predictive maintenance strategy</i> as root cause analysis is one tool used in predictive maintenance.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.

EVIDENCE GUIDE

What evidence is required for demonstration of consistent performance?

Generally a range of root cause analysis activities will be required in order to generate sufficient evidence.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Root cause

There are many possible causes of any problem. Eliminating some will have no impact, others will ameliorate the problem. However, elimination of the root cause will eliminate the problem. There should only be one root cause for any problem and so the analysis should continue until this one cause is found. Elimination of the root cause permanently eliminates the problem.

Cause tree

The series of causes is referred to as the cause tree. Not all root causes are accessible and able to be eliminated. Breaking the cause tree is such a way that the problem cannot recur is an acceptable alternative.

Not all situations can wait for the **root cause analysis** and eventual elimination of the root cause as there are serious current impacts. The **quick fix** will control these immediate impacts, but does not eliminate the root cause.

Uptime

Uptime refers to the overall availability of the plant - it is the inverse of downtime - or the unavailability of the plant. Ideal uptime is 100%.

Appropriate techniques/charts

Appropriate techniques/charts may include the following:

- control charts
- Pareto charts

RANGE STATEMENT	
	• run charts • flow charts • cause and effect diagrams • tree diagrams • 4W analysis.
Overall Equipment Efficiency (OEE)	Overall Equipment Efficiency (OEE) is the combination of the main factors causing loss of productive capacity from equipment/plant and is: <i>OEE = availability x performance x quality rate</i> where: • availability takes into account losses due to breakdown, set up and adjustments • performance takes into account losses due to minor stoppages, reduced speed and idling • quality rate takes into account losses due to rejects, re-works and start up waste.

Unit Sector(s)

Unit Sector	CM Tools

Co-requisite units

Co-requisite units	

Functional area

Functional Area	

MSACMT421A Facilitate a Just in Time (JIT) system

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers knowledge and skills required to facilitate the implementation/operation of a Just in Time (JIT)/kanban system in the organisation.

Application of the Unit

Application of the unit	In a typical scenario, the person will need to monitor the operation of the JIT system and facilitate its working. This will involve liaison with stakeholders as well as examining the data generated. They will need to be alert to potential problems and areas for improvement. This unit requires the application of skills associated with gathering, analysing and communicating information to facilitate implementation of the JIT system. It requires planning and organising skills and has a strong emphasis on communication and teamwork skills to ensure the JIT system is being effectively implemented. This unit also requires an ability to problem solve and take the initiative to consider performance issues and learn from experience to improve future performance.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Monitor the operation of the JIT system	1.1. Track value of key measures 1.2. Recognise indicators of poor performance 1.3. Take appropriate quick fix action
2. Liaise with relevant stakeholders	2.1. Regularly communicate with team members regarding the operation of the JIT system 2.2. Review JIT performance indicators with team members 2.3. Communicate with relevant personnel up and down the value chain regarding the operation of the JIT system 2.4. Identify issues with stakeholders and take appropriate quick fix action
3. Improve the JIT system	3.1. Identify areas requiring improvement in the JIT system 3.2. Review value of key measures 3.3. Recognise skill gaps in team members and other stakeholders 3.4. Determine any other issues in team members, other stakeholders and JIT system leading to poor performance indicators

ELEMENT	PERFORMANCE CRITERIA
	3.5. Develop appropriate improvement solutions 3.6. Liaise with relevant people regarding these solutions 3.7. Implement/assist with the implementation of the solutions

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- reading
- recording
- communicating
- planning
- analysing
- problem solving
- negotiating.

Required knowledge:

- JIT principles relevant to jobs
- procedures for making/recommending improvements
- reasons for delays/storages/inventories in that section of the value chain under their control and methods of reducing/eliminating them
- skill gap analysis and methods of filling skill gaps
- principles of the manufacturing process relevant to the section/team
- production data generated by the process and its application to JIT.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

EVIDENCE GUIDE	
Overview of assessment requirements	The person will at all times know the state of the JIT system in their area and will take actions to ensure its smooth operation on a day to day basis as well as recommend/undertake actions to improve it long term.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence should be available of the person's facilitation of the operation of the JIT system and their making of recommendations for/making improvements
In what context should assessment occur?	This unit will need to be assessed in an organisation operating JIT.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit is related to: • <i>MSACMT221A Apply Just in Time (JIT) procedures</i>, and • <i>MSACMT621A Develop a Just in Time (JIT) system</i> which cover the lower and higher skill levels in CMI respectively.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence should be gathered from an extended period showing routine support for the JIT system and regular improvements made/suggested.

EVIDENCE GUIDE**What are the specific resource requirements for this unit?**

Access to an organisation using JIT.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Just in time (JIT)

Just in time (JIT) is a production scheduling concept that calls for any item needed at a production operation - whether raw material, finished item, or anything in between, to be produced and available precisely when needed, neither a moment earlier nor a moment later.

Kanban

Kanban is a card or sheet used to authorise production or movement of an item; when fully implemented, kanban (the plural is the same as the singular) operates according to the following rules:

- all production and movement of parts and material take place only as required by a downstream operation, i.e. all manufacturing and procurement are ultimately driven by the requirements of final assembly or the equivalent
- the specific tool which authorizes production or movement is called a kanban. The word literally means card or sign, but it can legitimately refer to a container or other authorizing device. Kanban have various formats and content as appropriate for their usage (e.g. a kanban for a vendor is different than a kanban for an internal machining operation).

Kanban is typically applied to batch type operation and the production is measured in units produced. In continuous manufacturing organisations, production is measured in terms of production rate (e.g. kg/h, tonne/day) and rate is increased/decreased according to the flow authorisation which may be a kanban (e.g.

RANGE STATEMENT	
	ticket, order from a supplier) or may be a SCADA signal from a remote facility (e.g. customer tank) saying that resupply is required or similar.
SCADA	System Control and Data Acquisition (SCADA) is a general term applied to a number of systems which automatically collect critical process data, perform required mathematical manipulations on it and then make control decisions and/or give required information personnel for action.
Key measures	Key measures may include inventory levels, lead time, IFOTIS delivery, productivity/production rate, other measures of pull through the value chain, quality. IFOTIS refers to delivery of product In Full, On Time and In Specification.
Quick fix	Quick fix is action taken to immediately and cheaply control a problem, prevent it getting worse and/or ameliorate its impact, but which does not necessarily solve it long term.
Pull system	Pull is a system of making to demand rather than for stock or to a forecast.
Value chain	Competitive manufacturing organisations encompass the entire production system, beginning with the customer, and includes the product sales outlet, the final assembler, product design, raw material mining and processing and all tiers of the value chain (sometimes called the supply chain). Any truly 'competitive' system is highly dependent on the demands of its customers and the reliability of its suppliers. No implementation of competitive manufacturing can reach its full potential without including the entire 'enterprise' in its planning .

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT430A Improve cost factors in work practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed to evaluate the product or process outcomes of a team in terms of their cost components and to be able to determine in general terms the cost impacts of alternative actions.

Application of the Unit

Application of the unit	In a typical scenario, a person is able to assess the relative costs of alternatives and use this as one of the key factors in decision making. Typical decisions include the efficient organisation of work within a team and the improvement of throughput and cycle times. Decisions are made within the scope of the team's authority and according to procedures This unit primarily requires the application of skills associated with communication and information gathering, teamwork and problem solving to analyse the cost components of team processes. Initiative, enterprise, planning and organising are also required identify opportunities for improved cost efficiency. This unit also requires a degree of self management and learning to effectively operate and maintain skills and performance.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Analyse cost components of team's function	1.1. Identify <i>cost components</i> in the product or <i>process</i> 1.2. Identify costs factors under control of the team 1.3. Identify causes of variability in costs 1.4. Analyse impact of costs on production or process activities undertaken by team
2. Improve cost efficiency of team processes	2.1. Identify methods of improving productivity and/or reducing costs within team's area of responsibility 2.2. Determine cost/ <i>benefit</i> ratio of alternative methods improving productivity and/or reducing costs 2.3. Consult with all relevant stakeholders regarding possible changes 2.4. Recommend changes which will increase productivity and reduce cost and variability 2.5. Implement recommended changes in

ELEMENT	PERFORMANCE CRITERIA
	consultation with relevant stakeholders

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- basic numeracy.

Required knowledge:

- cost components of products made
- costs concepts such as expense, income and cost benefit
- major cost contributors to product (e.g. energy)
- the difference between internally and externally controlled costs
- difference between overhead, labour and consumables.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements	The person will as part of their routine decision making aim to maximise the cost efficiency of their work team within their scope of authority. There should be evidence of their doing so.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of routinely analysing cost factors relevant to their team's operation and implementing improvements to the team's cost efficiency.
In what context should assessment occur?	Assessment will need to occur in a workplace or by use of a work based case study.
Are there any other units which could or should be assessed with this	This unit may be assessed concurrently with appropriate units on continuous improvement.

EVIDENCE GUIDE	
unit or which relate directly to this unit?	
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence should be available over a period of time or from more than one process or product.
What are the specific resource requirements for this unit?	Access to a workplace implementing competitive manufacturing strategies. No other specific resources are required.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Cost components	Cost components may include fixed and variable costs such as power/energy, materials, plant and equipment, salary and wages, office expenses such as telephone, and government taxes and charges.
Process	Process may include a production, maintenance, logistics or office process in a manufacturing environment.
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
Benefits	Benefits should include positive benefits as well as negative benefits such as quality, safety, reliability and similar issues which may be impacted by a cost saving.

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT432A Analyse manual handling processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills to analyse manual handling in terms of its efficiency and safety.

Application of the Unit

Application of the unit	In a typical scenario a team leader or team member examines the manual handling component of a job and improves it in terms of safety, effort required and efficiency. This may be conducted for a job performed by others in the team, or it may be for the person's own job. This unit primarily requires the application of skills associated with problem solving and initiative and enterprise to identify safe and efficient manual handling and planning and organisation to ensure processes are implemented. This unit also requires communication with and involvement of team members to ensure they understand the approach and to facilitate training.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assess manual handling risks	1.1. Identify <i>manual handling hazards</i> in work area 1.2. Assess risks arising from those hazards
2. Analyse physical effort requirements of job	2.1. Determine basic manual handling requirements of job 2.2. Analyse requirements in terms of components such as lift, move, place, hold 2.3. Analyse items to be handled in terms such as weight, size, shape or other hazards
3. Determine time/effort components of physical effort	3.1. Break required movement pattern down into movement components 3.2. Determine time and effort requirements for movements 3.3. Develop alternative movement patterns 3.4. Determine time and effort requirements for alternative movements 3.5. Determine handling aids required to assist movement 3.6. Determine preferred movement pattern/s
4. Analyse the ergonomics of physical effort	4.1. Analyse the ergonomics of the preferred movement pattern 4.2. Develop substitute movements for any movement which is not ergonomically sound

ELEMENT	PERFORMANCE CRITERIA
5. Optimise application of physical effort	4.3. Determine handling aids required to improve ergonomics of required movements 5.1. Select movement patterns which are ergonomically sound and time and effort efficient 5.2. Train all relevant people to use these methods 5.3. Ensure procedures and practices reflect the optimum methods 5.4. Communicate with team members and involve them in development of alternatives to ensure awareness and facilitate learning

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- communication
- analysis
- teamwork
- basic mathematics
- problem solving.

Required knowledge:

- relevant OHS acts and regulations as applied to manual handling
- principles of efficient movement
- principles of efficient job and work method design
- principles of work analysis
- principles of ergonomics/safe movement.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training

EVIDENCE GUIDE Package.	
Overview of assessment requirements	The person will be able to examine a job for its physical components and then determine a better way of doing it. As a side benefit they will become more aware of poor manual handling practice and raise an alert to it.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence should be available of the analysis and improvements of the physical/manual handling aspects of jobs in the workplace.
In what context should assessment occur?	Assessment should use evidence from the analysis of real jobs or an appropriate simulation.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	There are no related units. Concurrent assessment may be undertaken with appropriate units.
What method of assessment should apply?	- Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. - Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. - The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. - The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Where evidence is from continuous improvement activities, then a range of such improvements needs to be considered to provide sufficient evidence. Where evidence is coming from one, complex improvement activity then it

EVIDENCE GUIDE	
	may provide sufficient evidence.
What are the specific resource requirements for this unit?	Access to a workplace which will allow the improvement of physical actions.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.	
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
Manual handling hazards	Manual handling hazards include all requirements as defined by the relevant occupational health and safety (OHS) acts and regulations, industry standards and best practice.

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT440A Lead 5S in a manufacturing environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competencies needed to facilitate and improve the 5S housekeeping environment.

Application of the Unit

Application of the unit	In a typical scenario, an organisation is implementing or practising a 5S approach to housekeeping. While 5S places much of the responsibility on team members, team leaders need to support, encourage and facilitate effective 5S in the workplace. The manufacturing environment for 5S may include the warehouse, tool shops, office etc. This unit requires the application of skills associated with communication, teamwork, problem solving, initiative, enterprise, planning, organising and self management in order to provide leadership in a 5S environment. This unit has a strong emphasis on planning and change management, but also requires an ability to learn from experience and feed new information back into strategies to improve performance.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Facilitate the set up of 5S	1.1. Assist team members to determine what are necessary and unnecessary items in the work area 1.2. Assist team members to determine optimum assigned location for all necessary items 1.3. Liaise with relevant production and occupational health and safety (OHS) personnel in determining optimum locations 1.4. Assist team members to determine optimum location for unnecessary items 1.5. Assist team members to determine 5S schedule 1.6. Ensure <i>procedures</i> reflect 5S practices 1.7. Assist team members to achieve the required level of skill
2. Monitor 5S	2.1. Check work area for 5S implementation as part of normal routine 2.2. Identify non-conformances 2.3. Negotiate solutions to non-conformances

ELEMENT	PERFORMANCE CRITERIA
3. Improve the 5S	3.1. Work with team members to find areas for improvement 3.2. Assist team members to develop improvement solutions 3.3. Facilitate the availability of resources required for the improvement solution 3.4. Facilitate the implementation of the improvement solution

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- communication
- planning
- organising
- prioritising
- reading and interpretation
- recording
- problem solving
- teamwork.

Required knowledge:

- meaning and application of 5S to their job
- principles of efficient workplace organisation
- purposes of 5S
- procedures relevant to job
- identification of skill gaps
- methods of addressing skill gaps
- ways of encouraging team members to find and suggest areas for improvement
- methods of making/recommending improvements
- methods of accessing required resources
- OHS

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.	
Overview of assessment requirements	There should be evidence of successful application of 5S in the person's work group and their positive interaction with it.
What critical aspects of evidence are required to demonstrate competency in this unit?	There should be evidence of the person's assisting team members to implement 5S and/or to implement improvements to 5S. There should be evidence of continuous improvement.
In what context should assessment occur?	Assessment needs to occur in a workplace practising or implementing 5S.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit could be assessed concurrently with other units relating to the team leader's interactions with their team. This unit differs from <i>MSACMT240A Apply 5S procedures in a manufacturing environment</i> which covers the application of 5S to the person's own work.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement

EVIDENCE GUIDE	
	of the assessment.
What evidence is required for demonstration of consistent performance?	5S needs to be a routine, natural part of everyone's job. As such there should be evidence of consistent application of 5S over an extended period.
What are the specific resource requirements for this unit?	Access to a workplace implementing or practising 5S. No other specific resources are required.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
5S	5S is a system of work organisation originally developed in Japan based around: A close translation of the five stages in the housekeeping approach is: • sort • set in order • shine • standardise • sustain

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT441A Facilitate continuous improvement in manufacturing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills required to facilitate continuous improvement (kaizen) in an organisation.

Application of the Unit

Application of the unit	In a typical scenario, this unit would apply to a team leader with responsibility for facilitating ongoing continuous improvement of the manufacturing process within the scope of their team's area of responsibility. This unit requires the application of skills associated with communication, teamwork, problem solving, initiative, enterprise, planning and organising in order to develop a continuous improvement process. This unit has a strong emphasis on developing and resourcing a team to embrace continuous improvement strategies.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Facilitate improvement team.	1.1. Assist the improvement team consider and select appropriate improvement projects 1.2. Facilitate resources and arrangements for the team to undertake improvement projects 1.3. Arrange for the provision of required data 1.4. Assist the improvement team develop <i>scope and benefit statements</i> 1.5. Organise for ongoing training of improvement team members as required
2. Build a continuous improvement process.	2.1. Organise for training as required for work group members 2.2. Encourage work group members to routinely monitor <i>key process indicators</i> 2.3. Build capacity in the work group to critically review the relevant parts of the value chain 2.4. Assist work group members to formalise improvement suggestions 2.5. Facilitate relevant resources and assist work group members to develop implementation plans 2.6. Monitor implementation of improvement plans taking appropriate actions to assist implementation where required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- analysis
- problem solving
- planning and organising
- communication
- negotiation
- documenting

Required knowledge:

- continuous improvement process.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide describes the underpinning knowledge and skills that must be demonstrated to prove competence. It is essential for assessment and must be read conjunction with the performance criteria, the range statement and the assessment guidelines of the relevant Training Package

Overview of assessment requirements

Assessment should confirm the ability to facilitate the use of continuous improvement at a team level within a manufacturing organisation

What critical aspects of evidence is required to demonstrate competency in this unit?

Evidence of the facilitation of continuous improvement should be available

In what context should assessment occur?

Assessment will need to occur in an organisation using continuous improvement or by project.

Are there any other units which could or should be assessed with this unit or which relate directly to this unit?

This unit could be assessed concurrently with other relevant units.

EVIDENCE GUIDE	
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment
What evidence is required for demonstration of consistent performance?	Generally routine continuous improvement by the work group and improvement team(s) from the work group would be needed to generate sufficient evidence
What are the specific resource requirements for this unit?	Access to an organisation using continuous improvement.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Scope and benefit	Scope and benefit statements of improvement project

RANGE STATEMENT	
statements	may include: • description of the business • the target work process • what the key stakeholders seek from the improvement project • a mission for the event • a set of goals • a statement of the do's and don'ts for the improvement project.
Key process indicators	Key process indicators may include: • statistical process control data/charts • orders • lost time, injury and other OHS records • equipment reliability charts • etc.

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT451A Mistake proof a production process

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills needed to make changes which prevent errors and/or backsliding to a pre-improvement level of practice. In the CM environment, this unit would typically be done by a team leader, technical expert of similar person.

Application of the Unit

Application of the unit	In a typical scenario a person needs to analyse the process that a team is responsible for and determine methods of <i>mistake proofing</i> it (i.e. ensuring it only produces product within an, acceptable range). After improvement activities have been undertaken these improvements need to be sustained. This unit requires the application of skills associated information gathering and analysis. Initiative, enterprise and problem solving are also required to identify mistakes and determine strategies for eliminating them. This unit also requires communication and team building skills to ensure mistake proofing strategies are implemented, and self management and learning skills to continually reflect on and integrate feedback about the effectiveness of strategies.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Analyse process	1.1. Identify sources of variability/non-conformance in the process 1.2. Identify critical control points in process 1.3. Analyse causes of variability/non-conformance
2. Develop preventative techniques/systems	2.1. Liaise with team members and other people to develop mistake proof method of performing operation 2.2. Test and validate mistake proofing
3. Implement permanent fix	3.1. Liaise with relevant people to have systems/procedures changed to implement solution 3.2. Liaise with relevant people to implement the solution 3.3. Liaise with relevant people to ensure the workforce has an appropriate skills set 3.4. Follow through to ensure implementation occurs

ELEMENT	PERFORMANCE CRITERIA
4. Monitor implementation	4.1. Critically observe the implementation 4.2. Compare the results of the implementation against the expected outcomes 4.3. Modify solution to improve outcomes 4.4. Ensure procedures reflect change 4.5. Ensure training/assessment reflects change 4.6. Audit change at agreed period/cycle 4.7. Take action on any observed deviation
5. Seek improvements	5.1. Observe changes 5.2. Analyse process again if required to ensure improvements are sustained

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- communication ability to discuss items with both operators and technical support personnel
- problem solving
- analysis
- team work
- design conceptualisation.

Required knowledge:

- understanding of their process
- factors in the process which may cause variability
- methods of controlling the variability in the process
- mistake proofing methods relevant to the process/product.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in

EVIDENCE GUIDE

conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment requirements	The person will be able to analyse their process and implement systems to ensure the process is mistake proof and the operators, work in a predictable way with little or no chance of mistake.
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of actions taken to mistake proof the process should be available.
In what context should assessment occur?	Assessment needs to occur in a workplace implementing competitive manufacturing or by using a suitable project.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be used as a stand alone unit or it may be assessed concurrently with any of: • <i>MSACMT250A Monitor process capability</i> • <i>MSACMT450A Undertake process capability improvements</i> • <i>MSACMT650A Determine and improve process capability.</i>
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for	Where evidence is from the application of <i>baka-yoke</i> to

EVIDENCE GUIDE	
demonstration of consistent performance?	continuous improvement, then there should be evidence that it is practiced routinely and from a number of standardisation activities. Where the evidence is from an initial standardisation of a process, or a single, large and complex standardisation/change process the may provide sufficient evidence.
What are the specific resource requirements for this unit?	Access to an organisation using a competitive manufacturing approach.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Mistake proofing	Sometimes known as baka-yoke/poka-yoke, a manufacturing technique of preventing mistakes by designing the manufacturing process, equipment, tools and components/subassemblies etc so that an operation literally cannot be performed incorrectly. An attempt to perform incorrectly, as well as being prevented, is usually met with a warning signal of some sort.
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the operation of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT452A Apply statistics to processes in manufacturing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills required to apply statistical theory and principles to the analysis and control of processes in manufacturing.

Application of the Unit

Application of the unit	In a typical scenario, statistical process control is being used on a process in a manufacturing organisation. Usually this will be to monitor the process and determine when action needs to be taken. The appropriate action will then be taken in accordance with standard procedures. To do this the person will apply their knowledge of frequency distribution and variation to the data/chart to distinguish between random and non-random variation and their understanding of the process and/or equipment to help interpret those results. This unit primarily requires the application of skills associated with gathering and analysing data and communicating statistical information to others. This unit also has a strong emphasis on problem solving, initiative and enterprise, planning and organising, and self management to solve problems and manage processes.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Collect process data.	1.1. Interpret sampling scheme 1.2. Obtain measurements in accordance with standard procedures 1.3. Handle data as required.
2. Interpret data	2.1. Plot data on appropriate control chart 2.2. Distinguish between random and non-random patterns of results 2.3. Identify results outside the control limits 2.4. Recognise situations requiring action 2.5. Take appropriate action in accordance with standard procedures 2.6. Determine cost of non-conformance
3. Calculate control limits.	3.1. Consult relevant stakeholders to determine appropriate limits 3.2. Use relevant methods to calculate/revise control limits

ELEMENT	PERFORMANCE CRITERIA
	3.3. Plot limits on control chart 3.4. Explain impact of limit to relevant stakeholders

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- analysis
- problem solving
- communication
- documenting
- calculations
- use of statistics

Required knowledge:

- sampling techniques
- purpose of sampling and measurement
- random, systematic, stratified sampling
- relevance, reliability and representativeness of samples/data collected
- purpose of replication of data for statistical control
- samples, populations, finite and infinite populations and the differences
- methods of calculating means, standard deviations and the like and their purpose in statistical control
- the causes of variation in a process
- the meaning of broad/ narrow frequency distributions/ range/standard deviations and skewed distributions in process terms
- types of control charts and their applications to different types of process/product and for different purposes
- process causes of variation and typical cause types of non-random variation
- non-process (eg measurement) causes of variation
- recognition of stable and unstable processes
- causes of stability/instability in the process
- calculation of control limits/process capability and the applications of different control limits
- the standard distribution curve and confidence limits.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide describes the underpinning knowledge and skills that must be demonstrated to prove competence. It is essential for assessment and must be read conjunction with the performance criteria, the range statement and the assessment guidelines of the relevant Training Package

Overview of assessment requirements	The competent person will be able to apply statistical theory to a process to interpret and reduce its variation.
What critical aspects of evidence is required to demonstrate competency in this unit?	Evidence of the application of statistical theory to a process should be available
In what context should assessment occur?	Assessment will need to occur in an organisation implementing statistical process control or by project.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit could be assessed concurrently with other units dealing with process capability and/or change management.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of

EVIDENCE GUIDE	
What evidence is required for demonstration of consistent performance?	Generally the application of statistics over a period of time would be required to generate sufficient evidence
What are the specific resource requirements for this unit?	Access to an organisation using statistical control.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Sampling scheme	Sampling scheme may include: • sampling for attributes or sampling for variables • batch, continuous or custom made products • number of items/samples • size of sample • timing of sampling • location of sampling points • type of sample • number/type of measurements to be done on each sample • sampling equipment • measurement/testing equipment/methods
Procedures	Procedures includes all work instructions, standard operating procedures, formulas/ recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

RANGE STATEMENT	
Handle data	Handle data may include: • calculating means, ranges, mean of means, standard deviation (using appropriate calculation aids) • entering data into a software package • recording data either in writing or electronically • other required manipulations of the data.
Control chart	Control charts may include: • run • tally • mean/range • attributes • other relevant charts
Random	Random variation is the term used in statistical control to refer to those variations for which no cause can be found.
Non-random	Non-random, also called identifiable cause, or assignable cause or special cause are those variations for which a cause can be found and so the cause of the variation eliminated. Non-random variation may also be used to predict possible breaches of the control limits.
Control limits	Control limits, also referred to as process capability are those limits within which the process will operate if it is 'under control'.
Cost of non-conformance	Cost of non-conformance includes: • reprocessing/rework • expediting • unplanned service • excess inventory • complaint handline • downtime • returns • scrap • labour costs • material costs • infrastructure costs/overhead • utility costs
Appropriate limits	Appropriate limits may include:

RANGE STATEMENT

	• 1 sigma warning limits • 2 sigma warning limits • 3 sigma control limits • 6 sigma limits

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT453A Use six sigma techniques

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills required to apply six sigma techniques in the workplace. Six sigma is a statistical based technique for improving quality in manufacturing and other supporting processes.

Application of the Unit

Application of the unit	This unit applies where a statistical based strategy such as six sigma will be used to establish current quality performance and then to investigate and improve all or part of a process. This will be done with other members of the process team. This unit requires the application of skills associated with using information, problem solving, initiative, enterprise, planning and organising in order to identify an area requiring improvement and develop a measured process to make improvements. This unit has prerequisites of <i>MSACMT452A Apply statistics to processes in manufacturing</i> Depending on the scale of six sigma implementation in the enterprise the following units may also be relevant: • <i>MSACMT450A Undertake process capability improvements</i> • <i>MSACMS401A Ensure process improvements are sustained</i> • <i>MSACMC410A Lead change in a manufacturing environment</i> • <i>MSAPMSUP390A Use structured problem solving tools</i>

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	MSACMT452A	<i>Apply statistics to processes in manufacturing</i>

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify an area requiring improvement	1.1. Identify customer needs from process 1.2. Identify customer benefits delivered by process 1.3. Identify areas requiring improvement
2. Apply DMAIC process	2.1. Define improvement project 2.2. Acquire required measurements/data 2.3. Analyse data and determine possible process improvements 2.4. Develop and test improvement solutions 2.5. Control and standardise the improvement
3. Review and confirm improvement.	3.1. Determine and document benefits 3.2. Ensure procedures and other relevant

ELEMENT	PERFORMANCE CRITERIA
	documentation is updated for improved procedure 3.3. Review process data after an appropriate period and confirm the improvement

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- analysis
- problem solving
- communication
- documenting
- calculations
- use of statistics

Required knowledge:

- Charting such as Pareto Charts, fish bone diagrams
- Statistical principles
- Acceptance criteria/confidence levels
- Define, Measure, Analyse, Improve and Control (DMAIC) methods
- Six sigma principles.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide describes the underpinning knowledge and skills that must be demonstrated to prove competence. It is essential for assessment and must be read conjunction with the performance criteria, the range statement and the assessment guidelines of the relevant Training Package.

Overview of assessment requirements

Assessment should confirm the ability to apply simple six sigma techniques in a manufacturing environment.

EVIDENCE GUIDE	
What critical aspects of evidence is required to demonstrate competency in this unit?	Evidence of applying all of the DMAIC stages to a manufacturing improvement project simple six sigma undertaken should be available.
In what context should assessment occur?	Assessment will need to occur in an organisation implementing six sigma or by project. The project should be clearly defined. Work on the project can be undertaken as part of a team. However the individual skills and knowledge of the person undertaking the unit must be able to be separately assessed.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit could be assessed concurrently with other units dealing with six sigma type work and/or change management. Depending on the project and the nature of the manufacturing operation the following units may be able to be assessed with this unit: • <i>MSACMT450A Undertake process capability improvements</i> • <i>MSACMS401A Ensure process improvements are sustained</i> • <i>MSACMC410 Lead change in a manufacturing environment</i> • <i>MSAPM290A Use structured problem solving tools</i>
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the

EVIDENCE GUIDE	
	workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Generally a number of small six sigma projects undertaken or active involvement in some larger six sigma projects would be required to generate sufficient evidence.
What are the specific resource requirements for this unit?	Access to an organisation using six sigma.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
DMAIC	DMAIC is a structured improvement process involving the following stages: • define • measure • analyse • improve • control and standardise
Define	Definition of the project to include: • 'as is' process map • defining benefits from the project • problem statement • goal statement • project scope
Measurements	Measurements may include: • identification of key measures/attributes

RANGE STATEMENT	
	• sampling schedule for project
Analyse	Analyse may include: • statistical analysis of data • root cause analysis • use of various problem solving/analysis tools
Improvement	Improvement may include: • generation and testing of improvements • selection of appropriate improvements
Control and standardise	Control and standardise may include: • documenting • transferring ownership of improved process

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT460A Facilitate the use of planning software systems in manufacturing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills required by a team leader or technical expert to use and facilitate the use of planning software systems (known by various names such as ERP, SAP and MRP). This unit also covers the interactions of the person with a planning software system as they both use it for their own work and support their team members use it.

Application of the Unit

Application of the unit	In a typical scenario, an organisation will be using planning software. The person will access the planning software system for their own work, but will also need to provide support and organise skill development programs for their team members. The planning software system will be a routine part of their work life. This unit primarily requires the application of skills associated with using communication technology and supporting team use of planning software. Problem solving, initiative and enterprise, and planning and organisational skills are required to ensure that planning software is used efficiently. This requires aspects of learning and self management to ensure own performance and that of the team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	MSACMT260A	<i>Use planning software systems in manufacturing</i>

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Communicate using the planning software system	1.1. Send and receive information using planning software 1.2. Send and receive messages using planning software
2. Make decisions using planning software	2.1. Interrogate the planning software system to find required current, historical or predicted information 2.2. Take actions appropriate to the information in accordance with procedures
3. Monitor the use of planning software	3.1. Routinely monitor planning software information and use along the <i>value chain</i> 3.2. Review performance and use of planning software with team
4. Support team use planning software	4.1. Regularly communicate with team, both using planning software and face to face 4.2. Identify improvements required

ELEMENT	PERFORMANCE CRITERIA
	4.3. Take appropriate actions to implement improvements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills:
• keyboarding/mousing • communication • teamwork • problem solving. • planning and organising
Required knowledge:
• hierarchy of planning software system and operation • information available from/through the planning software system • facilities and information offered by planning software • support/training/skill development mechanisms available for access by team members.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.	
Overview of assessment requirements	The person will need to be able to demonstrate an ability to understand and apply planning software to a work location or area and send, receive and interpret process and production data for that area. They should also be able to assist others in the use of the planning software system. Software editing is not required for this unit but the ability to recognise and suggest application improvements is required

EVIDENCE GUIDE	
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of competent use of planning software and also of assisting their team to use it effectively and efficiently.
In what context should assessment occur?	Assessment will need to occur on an organisation using planning software or simulation software.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit may be assessed concurrently with other relevant units. This unit covers the intermediate skill levels in CM for planning software. <i>MSACMT260A Use planning software systems in manufacturing</i> and <i>MSACMT660A Develop the application of enterprise systems in manufacturing</i> cover the lowest and highest skill levels respectively. <i>MSACMT260A Use planning software systems in manufacturing</i> is specified as a prerequisite, and should be applied to the person's own job.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Evidence of routine use over an extended period should be available. Planning software systems will typically log all interactions with it. Interrogation of the planning software system will therefore provide evidence of the operator's use of it. Actions taken

EVIDENCE GUIDE	
	may also be accessible from the planning software system itself, or may need other evidence available from the process.
What are the specific resource requirements for this unit?	Access to an organisation using planning software.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Planning software	Planning software is a general term applied to a number of software systems which integrate a range of business information such as finance, logistics maintenance and production. It is frequently referred to by names such as ERP, SAP or MRP/MRP II. In some cases it can be integrated with engineering applications such as Systems Control and Data Acquisition (SCADA) systems. In such cases <i>MSACMT261A Use SCADA systems in manufacturing</i> may also be required. Competitive manufacturing organisations encompass the entire production system, beginning with the customer, and includes the product sales outlet, the final assembler, product design, raw material mining and processing and all tiers of the value chain (sometimes called the supply chain). Any truly 'competitive' system is highly dependent on the demands of its customers and the reliability of its suppliers. No implementation of competitive manufacturing can reach its full potential without including the entire 'enterprise' in its planning.
Value chain	Competitive manufacturing organisations encompass the entire production system, beginning with the customer, and includes the product sales outlet, the final assembler, product design, raw material mining and processing and all tiers of the value chain (sometimes

RANGE STATEMENT	
	called the supply chain). Any truly 'competitive' system is highly dependent on the demands of its customers and the reliability of its suppliers. No implementation of competitive manufacturing can reach its full potential without including the entire 'enterprise' in its planning .

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSACMT482A Assist in implementing a proactive maintenance strategy

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills required by a maintenance person to assist in the implementation of a proactive maintenance strategy in a manufacturing environment. This unit includes the interaction between maintenance worker and operator as appropriate.

Application of the Unit

Application of the unit	In a typical scenario, an organisation has adopted/is implementing <i>Total Preventative Maintenance/Total Productive Maintenance (TPM), Reliability Centred Maintenance (RCM)</i> or <i>similar strategies</i>. As part of this the maintenance personnel are expected to assist in the implementation by determining appropriate maintenance related schedules and also by providing maintenance related assistance to non-maintenance personnel, such as assisting production personnel to fulfil their role in the TPM/RCM strategy. This unit requires the application of skills associated with problem solving and initiative and enterprise in order to analyse maintenance requirements. Communication, teamwork and planning and organising skills will be required to implement reliability strategies. This requires aspects of self management to ensure improvement of own performance and learning.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop components of reliability strategy for a work/plant area	1.1. Determine manufacturer's recommended <i>inspection, servicing</i> and related schedules for relevant plant 1.2. Consult with relevant people with regard to appropriate inspections, services and schedules 1.3. Discuss any conflicts with relevant people and seek resolution of conflicts 1.4. Develop schedules in liaison with relevant people 1.5. Identify inspections and servicing which may be done by operations personnel in liaison with relevant stakeholders
2. Assess current practice for maintenance implications	2.1. Evaluate <i>procedures</i> for plant/equipment reliability implications 2.2. Discuss current practices with relevant people to determine any plant/equipment reliability

ELEMENT	PERFORMANCE CRITERIA
3. Assist in implementing the reliability strategy	implications 2.3.Recommend changes to improve plant/equipment reliability in accordance with procedures 3.1.Arrange for schedules to be incorporated in relevant work plans 3.2.Identify training needs in discussion with relevant personnel 3.3.Assist personnel to develop required skills for inspections/servicing within scope of authority 3.4.Collect data/information as required by own work plan 3.5.Compare data/information with performance indicators 3.6.Recommend improvements to reliability strategy in accordance with procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- communication
- planning
- organising
- prioritising
- reading and interpretation
- recording
- problem solving.

Required knowledge:

- requirements of the proactive maintenance strategy being implemented
- principles of operation of the equipment/plant
- likely abilities of operations personnel with regard to inspections and servicing
- procedures relevant to job
- methods of making/recommending improvements.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment requirements	There should be evidence that the maintenance person is routinely applying proactive maintenance strategies in their routine work and that they are aware of why they are important. In a TPM environment, the operator needs to move to taking ownership of their equipment/plant and maintenance personnel have a role to play in helping this happen and in developing the competence of operating personnel to do so
What critical aspects of evidence are required to demonstrate competency in this unit?	Evidence of schedules developed and implemented and improvements recommended.
In what context should assessment occur?	This unit needs to be assessed in a workplace practising, or beginning to implement proactive maintenance.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit could be assessed in conjunction with a technical unit related to maintenance. This unit is related to: <i>MSACMT481A Undertake proactive maintenance analyses</i> which covers the analysis skills associated with proactive maintenance. These units are complimentary and in some organisations it may be appropriate for the one person to hold both competencies. This unit is related to: <i>MSACMT681A Develop a proactive maintenance strategy</i> which is the highest level unit dealing with proactive maintenance in CM.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable,

EVIDENCE GUIDE	
	authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	There needs to be evidence that schedules related to proactive maintenance have been developed either in an initial implementation of a proactive maintenance strategy, or have been developed as part of continuous improvement to the proactive maintenance strategy.
What are the specific resource requirements for this unit?	Access to a plant implementing/practising proactive maintenance. No other specific resources are required.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Total Preventative Maintenance/Total Productive Maintenance (TPM)	Total Preventative Maintenance/Total Productive Maintenance (TPM) is an application of total quality management to maintenance with the intention of increasing reliability, getting it right first time and increasing <i>Overall Equipment Efficiency (OEE)</i> .
Reliability Centred Maintenance (RCM)	Reliability Centred Maintenance (RCM) moves maintenance from reactive, or even planned/programmed, towards a focus on <i>uptime</i> and

RANGE STATEMENT	
	OEE.
Similar strategies	Mean Time Between Failure (MTBF) is one key measure of the effectiveness of a maintenance procedure, and is an indicator as to whether root causes are being found and resolved. If MTBF is reducing, then it is an indicator that the maintenance regime is failing. Failure Mode and Effects Analysis (FMEA) is a systematic approach that identifies potential failure modes in a system, product, or manufacturing/assembly operation caused by either design or manufacturing/assembly process deficiencies. It also identifies critical or significant design or process characteristics that require special controls to prevent or detect failure modes. FMEA is a tool used to prevent problems from occurring. Some industry sectors have highly adapted forms of FMEA and may practice traditional FMEA in say their routine maintenance while using another technique (such as HAZOP) for design and modification. Hazard and Operability Studies (HAZOP) is a form of FMEA which has been practiced by the process industries for over 30 years and examines the implications of changes in process conditions to process stability. Condition monitoring involves often quite sophisticated monitoring of equipment including such things as vibration monitoring, instrumental analysis of lubricating oil etc to determine the current state of the equipment, monitor the change in this condition and predict when it needs servicing/maintenance to maintain reliability.
Overall Equipment Efficiency (OEE)	Overall Equipment Efficiency (OEE) is the combination of the main factors causing loss of productive capacity from equipment/plant and is: $OEE = \text{availability} \times \text{performance} \times \text{quality rate}$ where: • availability takes into account losses due to breakdown, set up and adjustments • performance takes into account losses due to minor stoppages, reduced speed and idling • quality rate takes into account the losses due to

RANGE STATEMENT	
	rejects, reworks and start up waste.
Uptime	Uptime refers to the overall availability of the plant - it is the inverse of downtime - or the unavailability of the plant. Ideal uptime is 100%.
Inspection	Inspection may include: • reading dials, gauges, meters • observations including those using sight, hearing, smell, feel • observations of product quality/faults/rejects.
Servicing	Servicing may include: • cleaning • lubricating • topping up • adjusting.
Procedures	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Unit Sector(s)

Unit Sector	CM Tools

corequisite units

Corequisite units	

Functional area

Functional Area	

MSAENV272B Participate in environmentally sustainable work practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the outcomes required to effectively measure current resource use and carry out improvements including those reducing negative environmental impacts of work practices. This unit is based on the sustainability guideline standard GCSSUS01A Participate in environmentally sustainable work practices.

Application of the Unit

Application of the unit	This competency applies to operators/team members who are required to follow procedures so as to work in an environmentally sustainable manner. This ensures regulatory compliance and also aims at minimising environmental risks and maximises the environmental performance of the process and the organisation. It includes: • Resources used • Potential environmental hazards • Improving environmental performance (within scope of competency and authority). This competency applies to all sectors of the manufacturing industry and members of its value chain. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an

	organisation and across different industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	This unit has no prerequisites	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify current resource use and environmental issues.	1.1. Identify workplace <i>environmental and resource efficiency issues</i> . 1.2. Identify resources used in own work role. 1.3. <i>Measure</i> and record current usage of resources using <i>appropriate techniques</i> .

ELEMENT	PERFORMANCE CRITERIA
	1.4. Identify and report workplace environmental hazards to appropriate personnel.
2. Comply with environmental regulations.	2.1. Follow procedures to ensure compliance . 2.2. Report environmental incidents to appropriate personnel.
3. Seek opportunities to improve environmental practices and resource efficiency.	3.1. Follow enterprise plans to improve environmental practices and resource efficiency. 3.2. Make suggestions for improvements to workplace practices in own work area.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include the ability to:

- report as required by procedures
- follow procedures and instructions and respond to change
- ask questions and seek clarifications relating to work requirements

Reading and writing is required in order to interpret required procedures and complete required workplace forms/reports.

Numeracy is required to interpret numeric workplace information, readings and measurements, handle data as required and complete numeric components of workplace forms/reports.

Required knowledge

Competency includes sufficient knowledge to:

- have a basic understanding of sustainability
- know the environmental hazards/risks, resource use and inefficiencies associated with own workplace (at an appropriate level)
- know the relevant environmental and resource efficiency systems and procedures for own work area
- know the impact of laws and regulations to a level relevant to the work context

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competence in this unit must be able to provide evidence of the ability to follow workplace procedures according to instructions given and to participate in the improvement of environmental and resource efficient work practices at own level of responsibility. Evidence must be strictly relevant to the particular workplace role.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- identify and measure resources used in their job
- identify situations likely to lead to an environmental incident
- follow procedures related to environmental performance.

Consistent performance should be demonstrated. For example, look to see that:

- work is routinely to procedures
- the minimum of resources is used consistent with the job requirements, good practice and the procedures.

Context of and specific resources for assessment

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Depending on the selected methods of assessment access may be required to:

- workplace procedures and plans
- documentation in relation to production, waste, overheads, hazard control/management
- reports from supervisors/managers
- case study/scenarios

Method of assessment

A holistic approach should be taken to the assessment.

Competence in this unit may be assessed:

- by demonstration in the workplace

EVIDENCE GUIDE	
	• using targeted questioning for appropriate portions • by use of a suitable simulation and/or a range of case studies/scenarios • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment.
Guidance information for assessment	Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Procedures	All operations are performed in accordance with procedures including all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.
Environmental and resource efficiency issues	Environmental and resource efficiency issues include minimisation of environmental risks and maximisation of opportunities to improve business environmental performance and to promote more efficient production and consumption of natural resources, for example by: • minimisation of waste, through implementation of the waste management hierarchy

RANGE STATEMENT	
	• efficient and effective use of energy and other resources • seeking alternative sources of energy • efficient use of materials and appropriate disposal of waste • use of controls to minimise the risk of environmental damage from hazardous substances • efficient water use • reducing emissions • life cycle analysis applied to issues such as energy supply, materials, transport, production
Measure	Measure should be interpreted in a manner consistent with the scope of the job and may include things like: • counting the number of items entering/leaving a work area • reading indicators in the work area • obtaining relevant information from support personnel • other simple means
Appropriate techniques	Appropriate techniques include: • material fed to/consumed by plant/equipment • plant meters and gauges • job cards including kanbans • examination of invoices from suppliers • measurements made under different conditions • examination of relevant information and data.
Compliance	Compliance includes meeting relevant federal, state and local government laws, by-laws, regulations and mandated codes of practice. It also includes any codes and standards that the enterprise applies voluntarily.
Incidents	Incidents include: • breaches or potential breaches of regulations • occurrences outside of standard procedure which may lead to lower environmental performance.
Enterprise plans	Enterprise plans include:

RANGE STATEMENT	
	• documented policies and procedures • work plans to minimise waste, increase efficiency of water/energy use, minimise environmental hazards
Suggestions	Suggestions include ideas that help to: • prevent and minimise environmental risks and maximise opportunities • reduce emissions of greenhouse gases • reduce use of non-renewable resources • improve energy efficiency • increase use of renewable, recyclable, reusable and recoverable resources • reduce waste • increasing the reusability/recyclability of wastes/products • reduce water usage and/or water wastage.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Competitive manufacturing tools

Co-requisite units

Co-requisite units		

MSAENV472B Implement and monitor environmentally sustainable work practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the outcomes required to effectively analyse the workplace in relation to environmentally sustainable work practices and to implement improvements and monitor their effectiveness. This unit is based on the sustainability guideline standard GCSSUS02A Implement and monitor environmentally sustainable work practices.

Application of the Unit

Application of the unit	This competency applies to those who have responsibility for a specific area of work or who lead a work group or team. It addresses the knowledge, processes and techniques necessary to implement and monitor environmentally sustainable work practices, including the development of processes and tools. It includes: • Identifying areas for improvement • Developing plans to make improvements • Implementing and monitoring improvements in environmental performance. This competency applies to all sectors of the manufacturing industry and members of its value chain. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an organisation and across different industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	This unit has no prerequisites	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Investigate current practices in relation to resource usage.	1.1 Identify environmental regulations applying to the enterprise. 1.2 Assess procedures for assessing <i>compliance</i> with environmental regulations. 1.3 Collect information on environmental and resource efficiency systems and procedures, and provide to the work group where appropriate. 1.4 Measure and record current resource usage by members of the work group.

ELEMENT	PERFORMANCE CRITERIA
	1.5 Analyse and record current purchasing strategies. 1.6 Analyse current work processes to access information and data and assist in identifying areas for improvement.
2. Set targets for improvements.	2.1 Seek input from stakeholders, key personnel and specialists. 2.2 Access external sources of information and data as required. 2.3 Evaluate alternative solutions to workplace environmental issues. 2.4 Set efficiency targets.
3. Implement performance improvement strategies.	3.1 Source techniques/tools to assist in achieving targets. 3.2 Apply continuous improvement strategies to own work area of responsibility and communicate ideas and possible solutions to the work group and management. 3.3 Integrate environmental and resource efficiency improvement plans for own work group with other operational activities and implement them. 3.4 Seek suggestions and ideas about environmental and resource efficiency management from stakeholders and act upon them where appropriate. 3.5 Implement costing strategies to fully value environmental assets.
4. Monitor performance.	4.1 Document outcomes and communicate reports on targets to key personnel and stakeholders. 4.2 Evaluate strategies. 4.3 Set new targets and investigate and apply new tools and strategies. 4.4 Promote successful strategies and reward participants where possible.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

REQUIRED SKILLS AND KNOWLEDGE

- using relevant environmental and resource efficiency systems, tools and procedures
- applying quality assurance systems relevant to own work area
- applying relevant supply chain procedures
- measurement and calculation techniques
- communication/consultation skills to ensure information is supplied to the work group

Reading and writing is required to comprehend documentation and interpret environmental and energy efficiency requirements and to document and maintain records

Numeracy is required to interpret numeric workplace information, readings and measurements, handle data as required and complete numeric components of workplace forms/reports.

Required knowledge

Required knowledge includes:

- how to access and use relevant environmental and resource efficiency systems, tools and procedures
- understanding of best practice approaches relevant to own area of responsibility
- strategies to maximise opportunities and minimise impacts relevant to own work area
- relevant environmental and resource efficiency issues specific to industry practices
- methods for measuring and calculating resource usage

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competence in this unit must be able to provide evidence of the ability to implement and monitor integrated environmental and resource efficiency management policies and procedures within an organisation.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

EVIDENCE GUIDE	
	• monitor and investigate current resource usage • develop plans to improve sustainability • implement environmental improvements. Consistent performance should be demonstrated. For example, look to see that: • environmental performance is routinely monitored and investigated • areas for improvements are followed through and the implemented changes are in turn monitored and investigated.
Context of and specific resources for assessment	This section should be read in conjunction with the range of variables for this unit of competency. Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required. Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed: • by demonstration in the workplace • using targeted questioning for appropriate portions • through use of specific project(s) • by use of a suitable simulation and/or a range of case studies/scenarios • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or

EVIDENCE GUIDE	
	similar assessment.
Guidance information for assessment	Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Procedures	All operations are performed in accordance with procedures. Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards. Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Environmental and resource efficiency issues	Environmental and resource efficiency issues include: - addressing environmental and resource sustainability initiatives such as Environmental Management Systems, action plans, surveys and audits - reference to standards, guidelines and approaches such as: - ISO 14001 Environmental Management Systems - Life Cycle Analyses

RANGE STATEMENT	
	• Cradle to cradle • Global Reporting Initiative • Ecological footprinting • Triple Bottom Line reporting • Product Stewardship • determining enterprise's most appropriate waste treatment including waste to landfill, recycling, re-use and wastewater treatment • applying the waste management hierarchy in the workplace • initiating and/or maintaining appropriate enterprise procedures for operational energy consumption, including stationary energy and non stationary (transport) • efficient use of water • minimising greenhouse gas emissions • use of controls to minimise the risk of environmental damage from hazardous substances
Measure	Measuring techniques include: • material fed to/consumed by plant/equipment • plant meters and gauges • job cards including kanbans • examination of invoices from suppliers • measurements made under different conditions • examination of relevant information and data • others as appropriate to the specific industry contexts.
Techniques and tools	Techniques and tools may includeÂ : • visual workplace concepts • measurement, display and/or recording devices • changed work practices/procedures • competence development and awareness training • process and equipment items
Compliance	Compliance includes meeting relevant federal, state and local government laws, by-laws, regulations and codes of practice.
Incidents	Incidents include:

RANGE STATEMENT	
	• breaches or potential breaches of regulations • occurrences outside of standard procedure which may lead to lower environmental performance
Purchasing strategies	Purchasing strategies include: • influencing suppliers to take up environmental sustainability • selecting materials/components with a lower environmental profile.
Stakeholders, key personnel and specialists	Stakeholders, key personnel and specialists include individuals and groups both inside and outside the organisation that have some direct interest in the enterprise's conduct, actions, products and services, including: • employees at all levels of the organisation • customers • suppliers • other organisations • key personnel within the organisation, and specialists outside it who may have particular technical expertise
Suggestions	Suggestions includes ideas that help to: • prevent and minimise environmental risks and maximise opportunities • reduce emissions of greenhouse gases • reduce use of non-renewable resources • make more efficient use of energy, water and other resources • maximise opportunities to re use and recycle materials • identify strategies to offset or mitigate environmental impacts. e.g. purchasing of carbon credits • express purchasing power through the selection of suppliers with improved environmental performance. e.g. purchasing renewable energy and materials with lower embedded carbon • eliminate the use of hazardous and toxic materials increasing the reusability/recyclability of wastes/products.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Competitive manufacturing tools

Co-requisite units

Co-requisite units		

MSAENV672B Develop workplace policy and procedures for environmental sustainability

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the outcomes required to develop and implement a workplace sustainability policy, including the modification of the policy to suit changed circumstances. This unit is based on the sustainability guideline standard GCSSUS03A Develop workplace policy and procedures for sustainability.

Application of the Unit

Application of the unit	This competency applies to team leaders/supervisors/managers who are required to develop approaches to environmental sustainability within workplaces, including the development and implementation of policy. It includes: • Communicating with relevant stakeholders • Developing and monitoring sustainability policies • Reviewing and improving sustainability policies. This competency applies to all sectors of the manufacturing industry. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an organisation and across different industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	This unit has no prerequisites	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop workplace sustainability policy.	1.1 Define <i>scope of sustainability policy</i> . 1.2 Identify and consult <i>stakeholders</i> as a key component of the policy development process. 1.3 Review environmental sustainability <i>strategies</i> relevant to all stages of work covered by the policy 1.4 Make recommendations for policy options based on likely effectiveness, timeframes and cost. 1.5 Develop policy is that reflects the organisation's commitment to sustainability as an integral part of the

ELEMENT	PERFORMANCE CRITERIA
	business planning and as a business opportunity. 1.6 Agree upon appropriate methods of implementation.
2. Communicate the policy.	2.1 Promote the policy, including its expected outcome to key stakeholders. 2.2 Inform those involved in implementing the policy as to outcomes expected, activities to be undertaken and responsibilities assigned.
3. Implement the policy.	3.1 Develop and communicate procedures to help implement the policy. 3.2 Implement strategies for continuous improvement in resource efficiency. 3.3 Establish record systems for tracking continuous improvements in sustainability approaches and assign responsibilities.
4. Review policy implementation	4.1 Record outcomes and provide feedback to key personnel and stakeholders. 4.2 Investigate success or otherwise of policy. 4.3 Monitor records to identify trends that may require remedial action, and use to promote continuous improvement of performance. 4.4 Modify policy and or procedures as required to ensure improvements are made.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- developing and implementing systems and procedures to aid in the achievement of sustainability in the workplace
- applying quality assurance systems relevant to own enterprise
- accessing and applying other relevant enterprise policies, procedures and protocols
- relevant industry competency
- interpreting business/strategic plans

This unit requires the ability to:

REQUIRED SKILLS AND KNOWLEDGE

- read and evaluate complex and formal documents such as policy and legislation
- research, analyse and present information
- prepare written reports requiring precision of expression and language and structures suited to the intended audience
- adjust communication to suit different audiences
- deal with different points of view and dissenting stakeholders.

Required knowledge

Required knowledge includes:

- understanding of relevant policy development and implementation processes and practices
- understanding of the principles, practices and available tools and techniques of sustainability management relevant to the particular industry context
- best practice approaches relevant to own work area
- equal employment opportunity, equity and diversity principles and occupational health and safety implications of policy/s being developed

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competence in this unit must be able to provide evidence of the ability to develop and implement integrated sustainability policies and procedures within an enterprise. The review of the policy after implementation will also need to be evidenced.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- develop relevant policy and procedures that comply with the regulatory requirements and business plans
- develop a workable implementation strategy
- include measurable criteria for reviewing improvement.

Consistent performance should be demonstrated. For

EVIDENCE GUIDE	
	example, look to see that: • policy implementation is reviewed • policy is developed to become part of the routine practices of the organisation.
Context of and specific resources for assessment	This section should be read in conjunction with the range of variables for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required. Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Method of assessment	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge. A holistic approach should be taken to the assessment. Competence in this unit may be assessed: • by demonstration in the workplace • using targeted questioning for appropriate portions • through use of specific project(s) • by use of a suitable simulation and/or a range of case studies/scenarios • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment.
Guidance information for assessment	Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally

EVIDENCE GUIDE

	appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Scope of sustainability policy

Scope of sustainability policy include:

- The area/s of environmental sustainability to be targeted and whether social and economic sustainability will be incorporated
- The parts of the enterprise to which it is to apply, including whether it is for the whole enterprise, one site, one work area or combinations of these
- An investigation of the particular business and market context of the industry/ enterprise
- Addressing sustainability initiatives through reference to standards, guidelines and approaches such as:
 - ISO 14001 Environmental Management Systems
 - Life Cycle Analyses

RANGE STATEMENT	
	• Cradle to grave/cradle to cradle • Global Reporting Initiative • Ecological Footprint Assessment • Triple Bottom Line reporting • Product Stewardship.
Stakeholders	Stakeholders include individuals and groups both inside and outside the organisation that have some direct interest in the enterprise's conduct, actions, products and services, including: • employees at all levels of the organisation • customers • suppliers • regulators • other organisations.
Strategies	Implementation strategies include: • awareness raising among stakeholders • training of staff in principles and techniques of sustainability • promotional activities. Continuous improvement strategies include ongoing measuring, improving and monitoring such as: • Plan, do, check, act cycles • Kaizen (continuous improvement) • Kaizen blitz (breakthrough improvement event) • Six sigma approaches Environmental sustainability strategies include: • reducing toxic material and hazardous chemical use • minimising resource use through changes in processes, facility design and management • supply chain and life cycle management approaches • sourcing renewable energy and low carbon footprint materials • reducing, re-using, recycling and waste

RANGE STATEMENT

	reduction • product and process improvements • carbon offsets • reducing greenhouse gas and other emissions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Competitive manufacturing tools

Co-requisite units

Co-requisite units		

MSAPMSUP390A Use structured problem solving tools

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the solving of process and other problems, beyond those associated directly with the process unit/equipment, using structured process improvement tools to identify improvements and/or solve problems.

Application of the Unit

Application of this unit

The competency is typically performed by an experienced operator, team leader or supervisor.

Generally the person would be part of a team during the solving of complex or systemic problems and would be expected to perform all parts of this unit and at all times would be liaising and cooperating with other members of the team. This includes:

- using a range of formal problem solving techniques
- identifying and clarifying the nature of the problem
- devising the best solution
- evaluating the solution
- developing an implementation plan to rectify the problem.

This unit does not cover the solving of problems undertaken as part of the operator's normal role which is covered in the relevant operation competency unit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Identify the problem.	1.1 Identify variances from normal operating parameters and product quality. 1.2 Define the extent, cause and nature of the problem by observation and investigation. 1.3 State and specify the problem clearly.
2. Determine fundamental cause of problem.	2.1 Identify possible causes based on experience and the use of problem solving tools/analytical techniques. 2.2 Develop possible cause statements. 2.3 Identify fundamental cause.
3. Determine corrective action.	3.1 Consider all possible options for resolution of the problem. 3.2 Consider strengths and weaknesses of possible options. 3.3 Determine corrective action to remove the problem and possible future causes. 3.4 Develop implementation plans identifying measurable objectives, resource needs and timelines in accordance with safety and operating procedures. 3.5 Develop recommendations for ongoing monitoring

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
	and testing.
4. Communicate recommendations.	4.1 Prepare report on recommendations. 4.2 Present recommendations to appropriate personnel. 4.3 Follow up recommendations if required.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognise non-standard situations.

This unit of competency includes use of analytical techniques in problem solving such as:

- brainstorming
- fishbone diagrams/cause and effect diagrams
- process logic/process requirements
- logic tree
- similarity/difference analysis
- Pareto analysis
- force field/SWOT analysis
- flow charts
- control charts, runcharts and graphs
- scattergrams.

Action plans to solve problems are prepared including:

- priority requirements
- measurable objectives
- resource requirements
- methods for reaching objectives
- timelines
- coordination and feedback requirements
- safety requirements
- risk assessment
- environmental requirements.

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets and material labels as provided to operators.

Writing is required to the level of report writing and completing workplace forms.

Basic numeracy is also required, eg to interpret quality data and graphs.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to apply and explain:

- relevant equipment and operational processes
- enterprise policies and procedures
- enterprise goals, targets and measures
- enterprise quality, OHS and environmental requirements
- principles of decision-making strategies and techniques
- enterprise information systems and data collation
- industry codes and standards.

Consistent performance should be demonstrated. For example, look to see that:

- problems are recognised and clarified
- possible causes are identified, based on experience and use of analytical techniques in solving the problem, including:
 - identifying variations
 - identifying cause and effect
 - separating single problems from multiple problems
 - recognising recurring problems.
- fundamental cause of process or equipment faults is determined
- corrective/preventative implementation plans are developed to avoid recurrence of the problem
- implementation plan is presented to relevant personnel.

Assessment method and context

Assessment will occur on the job or in a simulated workplace.

Competence in this unit may be assessed:

- in a situation allowing the generation of evidence of the ability to recognise and respond to problems
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

The competency unit applies to a wide range of processes and equipment. The process manufacturing technical units of competency include a problem solving element where problems specific to that competency unit are to be resolved. This competency unit is where structured problem solving techniques are to be applied more broadly, or with greater depth/rigour than is implied by the problem solving element of the technical units.

In large plants or manufacturing organisations with multiple processes, it may apply to more than one process if those processes interact with each other. It applies to all operators across all functions.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Hazards

Typical hazards include leaks, spillages and equipment hazards that can occur during the walk-through of a plant.

Problems

'Anticipate and solve problems' means resolve a wide range of routine and non-routine problems, using product and process knowledge to develop solutions to problems which do not have a known solution/a solution recorded in the procedures.

Typical process and product problems may include:

- non- routine process and quality problems
- equipment selection, availability and failure
- teamwork and work allocation problems
- safety and emergency situations and incidents.
-

Unit Sector(s)

Not applicable.

MSL924002A Use laboratory application software

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the ability to use and apply computer application software in the laboratory, field and production plants for analysis and reporting.

Application of the Unit

Application of the unit	This unit of competency is applicable to technical officers and laboratory technicians in all industry sectors. It describes the application and use of software packages in the context of laboratory or field work. Typically this software would be for the storage, retrieval, analysis and display of information. There is no expectation that candidates would be able to customise the software to meet specific needs. Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These can be found at the end of this unit of competency under the section 'This competency in practice'.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Access application software	1.1. Identify software required for the task 1.2. Open software from a personal computer or network terminal
2. Use software for specified purposes	2.1. Input a range of scientific data into a computing system 2.2. Conduct searches for the retrieval of required data 2.3. Use application features for efficient computation 2.4. Construct data sets and databases for numerical and graphical analyses
3. Produce reports of retrieved data and/or processed data	3.1. Analyse data using features of the software package 3.2. Select options for constructing data reports 3.3. Print the results of data analyses using features of the software package 3.4. Integrate data from diverse application software

ELEMENT	PERFORMANCE CRITERIA
	units in a report 3.5. Report the outcomes and rationale for computerised database searches where appropriate 3.6. Reference computerised data sources according to the style requirements of the enterprise
4. Perform simple record housekeeping	4.1. Backup worked data according to enterprise standard procedures 4.2. Maintain archive data according to enterprise standard procedures 4.3. Maintain hard copy data according to standard enterprise operating procedures 4.4. Apply approved antivirus software and general standard quarantine procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- using software application features and instructions to input, save, analyse, sort, retrieve and display the records or data
- using software for the analysis, reporting and management of laboratory and field data and information
- using in-house software manuals to augment skills and solve operational problems
- selecting the most appropriate software package for the task
- backing up electronic storage
- using scanning software to protect in-house software and data

Required knowledge

Required knowledge includes:

- applications of the software package
- terminology associated with the software packages
- basic knowledge of the types of spreadsheet, database, data analysis packages that are available
- application of specific software package features to relevant laboratory tasks

REQUIRED SKILLS AND KNOWLEDGE

- relationship between the protocol for data input and file storage of the data
- general file and record maintenance
- relevant health, safety and environment requirements

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Assessors should ensure that candidates can:

- select the most appropriate software package for the task from the suite of software applications available
- use routine instruction sets of the software package to complete the task
- use software to analyse data such as quality control and instrument performance characteristics
- back up electronic storage
- use scanning software to protect in-house software and data.

Context of and specific resources for assessment

This unit of competency is to be assessed in the workplace or simulated workplace environment.

This unit of competency may be assessed with:

- *MSL925001A Analyse data and report results*
- *relevant MSL974000 series units of competency*
- *relevant MSL975000 series units of competency.*

Resources may include:

- access to a computer network or a personal computer
- software packages that include a database package, spreadsheet, statistical analysis and simple graphics output
- input and output data.

Method of assessment

The following assessment methods are suggested:

- review of analysis tasks linking test results to the

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	generation of meaningful reports by the candidate • review of simple statistical and/or graphical analysis of quality control data completed by the candidate • oral and written exercises in preparation for keyboard activities. In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. Access must be provided to appropriate learning and/or assessment support when required. The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work like environment.
This competency in practice	Industry representatives have provided the case studies below to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. Manufacturing A laboratory technician performs tests on starting materials, such as appearance, identity, melting point, moisture content, trace elements, sulfated ash and assay. The results are entered in a computer database that allows trend analysis to be carried out on the test results for materials from each supplier. As a result, the technician may recognise when a supplier is experiencing potential problems with their production process. The technician would then notify the supervisor and/or supplier that there is a high probability that future supplies may be out of specification and that constant monitoring of starting materials will be required. Biomedical An important task of the technical officer in a pathology laboratory is to perform statistical analysis for quality control purposes. The software package provides for the input of data, analysis of mean value and variance as well

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	as graphical reporting. The technical officer uses a dedicated software package or a package within the customised pathology data management system in order to assess the validity of the results produced from the analytical instrument. Food processing A technical officer is required to perform a nutrient analysis of a food product, the results of which will be displayed on the food container. The output from the nutrient analysis is fed into a software program that calculates the levels of these components 'per portion' and 'per 100g' and displays the information in the correct tabular format. The software package is designed so that the technical officer can input new data or access existing data and manipulate that data to provide a full and accurate nutrient display or report.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Codes of practice	Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used
Information sources	Information sources may include: • manuals of enterprise standard instructions • hardware manuals • software manuals • training materials to orient software to enterprise needs • on-screen instructions embedded in the software
Software packages	Software packages may include:

RANGE STATEMENT	
	- word processing - spreadsheets - databases - graphical and statistical analysis - laboratory information systems
Occupational health and safety (OHS) and environmental management requirements	OHS and environmental management requirements: - all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time - all operations assume the potentially hazardous nature of samples and require standard precautions to be applied - where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health

Unit Sector(s)

Unit sector	Data

Competency field

Competency field	

Co-requisite units

Co-requisite units		

Co-requisite units		

MSL973001A Perform basic tests

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the ability to perform tests and measurements using standard methods with access to readily available advice from supervisors.

Application of the Unit

Application of the unit	This unit of competency is applicable to laboratory/field assistants working in all industry sectors. In general, they do not calibrate equipment and make only limited adjustments to the controls. They do not interpret or analyse results or troubleshoot equipment problems. Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These are found at the end of this unit of competency under the section 'This competency in practice'.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret test requirements	1.1. Review test request to identify samples to be tested, test method and equipment involved 1.2. Identify hazards and enterprise controls associated with the sample, preparation methods, reagents and/or equipment
2. Prepare sample	2.1. Record sample description, compare with specification, record and report discrepancies 2.2. Prepare sample in accordance with appropriate standard methods
3. Check equipment before use	3.1. Set up test equipment in accordance with test method 3.2. Perform pre-use and safety checks in accordance with enterprise procedures and manufacturer's instructions 3.3. Identify faulty or unsafe equipment and report to appropriate personnel 3.4. Check calibration status of equipment and report any out of calibration items to appropriate personnel
4. Perform tests on samples	4.1. Identify, prepare and weigh or measure sample and standards to be tested

ELEMENT	PERFORMANCE CRITERIA
	4.2. Conduct tests in accordance with enterprise procedures 4.3. Record data in accordance with enterprise procedures 4.4. Perform calculations on data as required 4.5. Identify and report out of specification or atypical results promptly to appropriate personnel 4.6. Shut down equipment in accordance with operating procedures
5. Maintain a safe work environment	5.1. Use established safe work practices and personal protective equipment to ensure personal safety and that of other laboratory personnel 5.2. Minimise the generation of wastes and environmental impacts 5.3. Ensure safe disposal of laboratory and hazardous wastes 5.4. Clean, care for and store equipment and reagents as required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- interpreting enterprise procedure or standard methods accurately
- using safety information, such as material safety data sheets (MSDS) and performing procedures safely
- checking test equipment before use
- completing all tests within required timeline without sacrificing safety, accuracy or quality
- calculating, recording and presenting results accurately and legibly
- maintaining security, integrity and traceability of all samples, data/results and documentation
- cleaning and maintaining equipment

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge includes:

- concepts of metrology
- the international system of units (SI)
- purpose of test
- principles of the standard method
- pre-use equipment checks
- relevant standards/specifications and their interpretation
- sources of uncertainty in measurement and methods for control
- enterprise and/or legal traceability requirements
- interpretation and recording of test result, including simple calculations
- procedures for recognition/reporting of unexpected or unusual results
- relevant health, safety and environment requirements

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors should ensure that candidates can:

- accurately interpret enterprise procedures or standard methods
- complete all tests within the required timeline without sacrificing safety, accuracy or quality
- demonstrate close attention to the accuracy and precision of measurements and the data obtained
- maintain the security, integrity and traceability of all samples, data/results and documentation.

Context of and specific resources for assessment

This unit of competency is to be assessed in the workplace or simulated workplace environment.

This unit of competency may be assessed with:

- *MSL922001A Record and present data.*

Resources may include:

- standard laboratory equipped with appropriate

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	equipment standards and materials • enterprise procedures and standard methods, and equipment manuals • MSDS.
Method of assessment	The following assessment methods are suggested: • review of the quality of test data/results achieved by the candidate over time • inspection of records and workplace documentation completed by the candidate • feedback from peers and supervisors • observation of the candidate performing a range of basic tests • oral or written questioning to check underpinning knowledge of test procedures. In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. Access must be provided to appropriate learning and/or assessment support when required. The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work like environment.
This competency in practice	Industry representatives have provided the case studies below to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. Manufacturing Standard testing methods may be viewed as legal requirements that must be followed to ensure that a product manufactured in a chemical plant meets the specification by which it is sold to the customer. Technical assistants perform tests in a quality control laboratory to ensure that material meets legal requirements and the material is safe and effective in use. Peroxides may be present in ether as a result of

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light-catalysed air oxidation. Peroxides are toxic and can give rise to mixtures which are explosive when distilled. Technical assistants test ether to ensure that the level of peroxide is within acceptable limits. The test is done by shaking ether with a solution of potassium iodide. After standing for 30 minutes in the dark the yellow colour of the aqueous phase, due to the liberation of iodine, must not be more intense than a prepared standard solution. These tests ensure the quality and safety of the ether.

Food processing

A snack food company produces a range of high quality, impulse purchase snack foods. Some of these products are moisture and/or oxygen sensitive and are therefore packaged in multi-layer flexible packaging to provide optimum shelflife. The packaging must also be able to withstand the rigours of the production and distribution process. While the packaging is purchased to meet the shelflife and distribution specifications, the quality assurance program requires the periodic evaluation of the packaging materials against these specifications. A laboratory assistant uses standard methods to test the tearing resistance, bursting strength, impact resistance and permeability and/or leakage of the snack food packaging. Tests are also conducted on aspects of the manufacturing process that can affect shelflife. These tests involve the measuring of the heat-seam strength and the sealing performance of the closure process. The test results are recorded by the laboratory assistant to verify the conformance of the materials to the supplier specifications and of the process to the manufacturing specifications. The assistant reports any anomalies or non-conformances to the appropriate personnel.

Construction materials testing

A technician performs an Aggregate Stripping Test (AS 1141.50) and enters the results in the laboratory's information management system (LIMS). The resulting 20-30% stripped values (i.e. 70-80% adhering) indicate a 'fail' result. The technician notes that he has repeated the test and obtained the same 'fail' result. The laboratory manager reviews the results and asks the technician to explain how he performed the test. He describes how he prepared 3-4 mm thick plates of bitumen and binding agent in the mould and then placed 50 small clean pieces of aggregate on top. After treatment in an oven for 24

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	hours and a 50°C water bath in accordance with the test method, the technician had then carefully pulled out the pieces of aggregate and avoiding any twisting motion. He then estimated the % of bitumen adhering to each of the stones with the expectation that the stripped value would be about 5% (i.e. 95% adhering). The manager is satisfied that the technician has performed the test in accordance with the method and suggested that he now re-run the test with a known aggregate as a control. This test gives a stripped value of 5-7% (i.e. 93-95% adhering). The manager is now sufficiently confident of the laboratory's results to sign and issue the test report and explain the aggregate's 'test failure' to the client.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Codes of practice

Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used

Standards, codes, procedures and/or enterprise requirements

Standards, codes, procedures and/or enterprise requirements may include:

- Australian and international standards, such as:
 - AS ISO 1000-1998 The international system of units (SI) and its application
 - AS ISO 17025-2005 General requirements for the competence of testing and calibration laboratories
 - AS/NZS 2243 Set:2006 Safety in laboratories set
- Australian code of good manufacturing practice for medicinal products (GMP)
- calibration and maintenance schedules

RANGE STATEMENT	
	• enterprise recording and reporting procedures • equipment manuals • equipment startup, operation and shutdown procedures • MSDS and safety procedures • material, production and product specifications • national measurement regulations and guidelines • principles of good laboratory practice (GLP) • production and laboratory schedules • quality manuals • standard operating procedures (SOPs)
Concepts of metrology	Concepts of metrology may include: • that all measurements are estimates • measurements belong to a population of measurements of the measured parameters • repeatability • precision • accuracy • significant figures • sources of error • uncertainty • traceability
Preparation of samples	Preparation of samples may include: • sub-sampling or splitting using procedures, such as riffing, coning and quartering, manual and mechanical splitters • diluting samples • physical treatments, such as ashing, dissolving, filtration, sieving, centrifugation and comminution • moulding, casting or cutting specimens
Typical tests carried out by laboratory/field assistants	Typical tests carried out by laboratory/field assistants may include: • visual/optical tests of appearance, colour, texture, identity, turbidity, refractive index (alcohol content and Baume/Brix) • physical tests: • density, specific gravity and compacted

RANGE STATEMENT	
	- density • moisture content and water activity • particle size, particle shape and size distribution • chemical tests: • gravimetric • colorimetric • electrical conductivity (EC) and pH • specific ions using dipsticks and kits • nutrients (e.g. nitrates and orthophosphates) using basic kits • ashes, including sulphated ashes • biological/environmental tests: • pH, oxygen reduction potential (ORP), dissolved oxygen (DO) and (EC) • E coli using test kits • surface hygiene/presence of microbes • packaging tests: • tearing resistance, bursting strength and impact resistance • permeability and/or leakage • mechanical tests: • Emerson class • concrete slump
Measurements	Measurements may include: • simple ground surveys • meteorological parameters, such as wind direction/strength, rainfall, maximum/minimum temperature, humidity and solar radiation • simple background radiation survey • production/process parameters, such as temperature, flow and pressure • gas levels in a confined space
Common measuring equipment	Common measuring equipment may include: • dimension apparatus • DO and EC • analogue and digital meters and charts/recorders

RANGE STATEMENT	
	• basic chemical and biological test kits • dipsticks and site test kits (e.g. HACK) • timing devices • temperature measuring devices, such as thermometers and thermocouples
Hazards	Hazards may include: • electric shock • biohazards, such as microbiological organisms and agents associated with soil, air, water, blood and blood products, and human or animal tissue and fluids • solar radiation, dust and noise • chemicals, such as sulphuric acid, fluorides and hydrocarbons • aerosols • sharps, broken glassware and hand tools • flammable liquids • dry ice and liquid nitrogen • fluids under pressure • sources of ignition • occupational overuse syndrome, slips, trips and falls • manual handling, working at heights and working in confined spaces • crushing, entanglement and cuts associated with moving machinery or falling objects
Enterprise controls to address hazards	Enterprise controls to address hazards may include: • use of MSDS • use of signage, barriers and service isolation tags • use of personal protective equipment, such as hard hats, hearing protection, sunscreen lotion, gloves, safety glasses, goggles, face guards, coveralls, gowns, body suits, respirators and safety boots • use of appropriate equipment, such as biohazard containers and cabinets and laminar flow cabinets • recognising and observing hazard warnings and safety signs

RANGE STATEMENT	
	• labelling of samples, reagents, aliquoted samples and hazardous materials • handling and storage of all hazardous materials and equipment in accordance with labelling, MSDS and manufacturer's instructions, and enterprise procedures and regulations • cleaning and decontaminating equipment and work areas regularly using recommended procedures • following established manual handling procedures for tasks involving manual handling
Minimising environmental impacts	Minimising environmental impacts may involve: • recycling of non-hazardous waste, such as chemicals, batteries, plastic, metals and glass • appropriate disposal of hazardous waste • correct disposal of excess sample/test material • correct storage and handling of hazardous chemicals
Occupational health and safety (OHS) and environmental management requirements	OHS and environmental management requirements: • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health

Unit Sector(s)

Unit sector	Testing

Competency field

Competency field	

Co-requisite units

Co-requisite units		

MSL973007A Perform microscopic examination

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the ability to set up a light microscope for optimum resolution, to prepare routine samples and to observe, identify and report sample characteristics.

Application of the Unit

Application of the unit	This unit of competency is applicable to laboratory or technical assistants in all industry sectors. The unit of competency covers limited interpretation and analysis of results. Troubleshooting of equipment and procedures is not required. Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These are found at the end of this unit of competency under the section 'This competency in practice'.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret test requirements	1.1. Review test request to identify samples to be tested, test method and equipment involved 1.2. Identify hazards associated with the sample, preparation methods and equipment and implement enterprise control measures
2. Set up work area for preparation and examination of samples	2.1. Collect equipment and arrange the workspace so that equipment can be used safely and efficiently 2.2. Perform pre-use and safety checks to ensure equipment is fit for purpose and report faulty or unsafe equipment to appropriate personnel
3. Prepare samples for examination	3.1. Log and label samples according to enterprise procedures to ensure traceability 3.2. Check suitability of the original and prepared sample for the examination and report unsuitable samples to appropriate personnel 3.3. Prepare and store the sample for examination following enterprise methods

ELEMENT	PERFORMANCE CRITERIA
4. Set up and use a light microscope	4.1. Set up the light path to optimise resolution 4.2. Select the appropriate objectives and filter for the sample being examined 4.3. Ensure that the lenses are clean 4.4. Adjust settings and alignment of the light path to optimise performance 4.5. Place sample correctly on the stage
5. Observe, identify and report sample characteristics	5.1. Recognise and identify significant sample characteristics 5.2. Perform required calculations accurately 5.3. Prepare and view control samples and check that results are consistent with expected values 5.4. Identify and report out of specification or atypical results promptly to appropriate personnel 5.5. Record and report data in accordance with enterprise procedures
6. Maintain a safe work environment	6.1. Ensure safety and minimise cross-contamination through the use of personal protective clothing and safety equipment 6.2. Handle all samples and equipment in accordance with enterprise safety protocols 6.3. Clean up spills using appropriate techniques to protect personnel, work area and environment 6.4. Minimise generation of waste and environmental impacts 6.5. Collect and dispose of all wastes safely 6.6. Report hazards and incidents to designated personnel using enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- setting up the workbench and microscope ergonomically

REQUIRED SKILLS AND KNOWLEDGE

- setting up, cleaning and using a light microscope to achieve optimum resolution of the specimen
- using personal protective clothing and other safety equipment correctly
- performing counts on samples
- performing basic measurements using grids
- logging and tracking samples through all steps from receiving a sample through to completion of a procedure and reporting
- interpreting and recording test results, including simple calculations
- correctly handling and storing samples and equipment

Required knowledge

Required knowledge includes:

- parts and functions of a light microscope
- importance and appropriate use of controls and certified reference materials
- hazards and risks in laboratories associated with performing microscopic examination
- enterprise and/or legal traceability requirements
- relevant health, safety and environment requirements

Specific industry

Additional knowledge requirements may apply for different industry sectors. For example:

Biological industry:

- basic structure and function of cells and organelles
- basic classes and classification of organisms of organisms, such as prokaryotes, eukaryotes, plants, animals, bacteria, viruses and prions
- cell physiology and processes, such as simple and facilitated diffusion, plasmolysis, osmosis, tonicity, active transport, energy production, mitosis, motility, phagocytosis and pinocytosis
- purposes and mechanisms of staining (e.g. Gram +ve and -ve)

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors should ensure that candidates can: • follow enterprise standards, procedures and practices • prepare suitable samples • recognise, identify and document significant sample characteristics • set up a light microscope for optimal resolution • maintain personal safety and that of others • minimise cross-contamination and contamination of the laboratory and environment.
Context of and specific resources for assessment	This unit of competency is to be assessed in the workplace or simulated workplace environment. This unit of competency may be assessed with: • <i>MSL922001A Record and present data</i> • <i>MSL933002A Contribute to the achievement of quality objectives</i> • <i>MSL943002A Participate in laboratory/field workplace safety</i> • <i>MSL953001A Receive and prepare samples for testing.</i> Resources may include: • standard laboratory equipped with appropriate equipment, such as light microscopes and samples • enterprise procedures, standard methods and materials.
Method of assessment	The following assessment methods are suggested: • observation of the candidate performing microscopic examinations • review of data records prepared by the candidate, such as counts, observations and results • feedback from supervisors and peers about adherence to enterprise/technical procedures • questioning to assess underpinning knowledge. In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and

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	disability. Access must be provided to appropriate learning and/or assessment support when required. The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work like environment.
This competency in practice	Industry representatives have provided the case studies below to illustrate the practical application of this unit of competency and show its relevance in a workplace setting. Construction materials testing The supply of river sand is running out and quarries are accessing alternative sources of sand for use in concrete mixes in construction. The sand should not be an aggregate that is likely to break down into smaller particles. A technician in a quarry company is required to analyse samples of crushed rock using a light microscope. The technician looks for characteristics of the sample, such as angularities, roundness, sharpness, cracks, presence of organic matter, mineral structure and whether the particles are a conglomerate. If the sample does not meet the characteristics, the company will need to treat it to make it suitable for use in concrete mixes (for example by washing, crushing and sieving). Food processing A customer complaint is received about the baking properties of a flour delivery. The laboratory assistant at the flour mill is given the task of testing the starch content of the suspect flour. He/she prepares iodine stained samples of the returned flour and a range of baked and partially baked products prepared from it. First, the assistant makes up fresh iodine staining solution and then prepares slides of each sample for microscopic examination. He/she identifies the characteristic starch granules of the flour sample and records the degree of gelatinisation in the starch granules in the baked samples. He/she discusses the results with the supervisor and prepares a report for the customer. Biomedical A laboratory assistant works in the microbiology laboratory of a public hospital and is responsible for

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preparing and staining sputum smears from patients for micro and culture. The assistant puts on a clean gown and gloves before collecting the specimens from the reception area of the laboratory. The assistant prepares cultures of the sputum specimens on simple and selective media before preparing, fixing and staining smears for microscopic examination. The results are checked by the supervisor, entered into the laboratory information management system (LIMS) and sent to the appropriate section of the hospital.

Environmental

A laboratory assistant prepares media for plant tissue culture. There has been some contamination of Gram-positive bacteria in the last two batches and the supervisor has initiated an overhaul of the preparation and aliquotting procedure. The laboratory assistant has been asked to follow the new procedure exactly and to remove samples at each stage of ingredient addition for microscopic examination. The laboratory assistant records the exact addition amounts, batch numbers and brands of the reagents, the location of the addition (which biohazard cabinet), the equipment used and the pre-sterilisation records of all equipment.

The laboratory assistant then prepares slides, fixes them and performs a Gram stain on each of the aliquots removed from the new preparation run. Microscopic analysis of each aliquot reveals nil contamination. The supervisor decides that there has been a breach in the old procedure and the laboratory assistant is asked to follow the new procedure and to perform a routine microscopic check on all batches for the next month.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Codes of practice	Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used
Standards, codes, procedures and/or enterprise requirements	Standards, codes, procedures and/or enterprise requirements may include: • Australian and international standards, such as: • AS ISO 17025-2005 General requirements for the competence of testing and calibration laboratories • AS/NZS ISO 9000 Set:2008 Quality management systems set • AS/NZS 2243 Set:2006 Safety in laboratories set • principles of good laboratory practice (GLP) • Australian code of good manufacturing practice for medicinal products (GMP) • safety manuals • quality manuals and equipment and procedure manuals • standard operating procedures (SOPs) • material safety data sheets (MSDS) • enterprise recording and reporting procedures • production and laboratory schedules • material, production and product specifications
Preparation of samples	Preparation of samples may include: • aseptic transfer of specimen • centrifugation • cooling • drying • filling a counting chamber in one continuous flow without bubbles or overflow • filtration • fixing of films to minimise cell damage and the production of artefacts • labelling • mounting of stained films, sections and whole mounts to ensure long term preservation • permanent labels for smears, films and sections for presentation, storage and retrieval • physical or chemical separation

RANGE STATEMENT	
	• selection of diluent to preserve or enhance visibility of the cells to be counted • selection, filling and cover slipping of a clean, dry counting chamber to ensure even distribution of cells during filling • serial dilution to enable individual cells to be reliably counted • staining of fixed material to illustrate required characteristics • sub-sampling • thin film or smear on a slide
Checking sample condition	Checking sample condition may include: • labelling • spillage • spoilage due to incorrect storage and transport conditions • temperature control • suitability for the examination
Pre-use checks	Pre-use checks may include: • calibration • cleaning/checking use by dates of reagents • routine maintenance
Equipment	Equipment may include: • glass slides • counting chambers (e.g. haemocytometer) • optical graticules and stage micrometers • tissue culture flasks
Light microscopes	Light microscopes may include: • bright field illumination microscopic examination up to 1000x magnification • stereomicroscopes and dissection microscopes • compound microscopes • phase contrast microscopes • inverted microscopes
Biological samples	Biological samples may include: • smears, impression smears, sections, squashes, films and whole mounts • a monolayer of cells in smears and films

RANGE STATEMENT	
	• fixed smears for demonstration of bacteria by the methylene blue and Gram staining techniques • blood films stained by a Romanowsky technique to clearly show differentiation of granulocytes • stained sections of animal tissues using regressive haematoxylin and eosin to differentiate cytoplasmic and nuclear detail • differentially stained monocotyledon and dicotyledon stem sections to demonstrate the structure of vascular bundles (xylem, phloem and cambium) • stained whole mounts of helminths • whole mounts, such as liver flukes, planaria and samples of animal faeces to demonstrate ova, cysts and larvae • pond water organisms • onion root tip squash • midstream sample of urine
Physical samples	Physical samples may include: • sand • asbestos fibres • coal samples • construction testing materials • geological specimens
Checking prepared samples	Checking prepared samples may include looking for: • clean and scratch-free microscope slides to reduce artefacts • preparation according to SOPs • a homogeneous suspension of sample • films and smears that have been fixed rapidly • thin films with a monolayer of cells • appropriate whole mounts for intact organisms • correct sample identification during and after processing
Sample characteristics	Sample characteristics are restricted to what can be viewed by bright light microscopy and may include:

RANGE STATEMENT	
	• shape and size of particles • presence of contamination • colour • consistency and variability • number of cells (e.g. cells in blood or other particulate samples, such as a yeast suspension or pollen grains) • type of cells, percentage of atypical cells, presence/absence of cells, size of cells, viable and non-viable cells and trajectory • presence of stained material, such as starch • colour/staining and morphology • motility
Calculations	Calculations may include: • dilutions • percentage viability • number of cells in original sample after dilution • calculation of cells/ml in a number of squares of a counting chamber
Hazards	Hazards may include: • micro-organisms and agents associated with soil, air, water, blood and blood products and human or animal tissue and fluids • chemicals and stains • sharps and broken glassware • aerosols
Safety practices and personal protective equipment	Safety practices and personal protective equipment may include: • use of MSDS • use of personal protective equipment, such as safety glasses, gloves and coveralls • use of biohazard containers and laminar flow cabinet • correct labelling of reagents and hazardous materials • handling and storing hazardous materials and equipment in accordance with labels, MSDS and manufacturer's instructions • ergonomic layout, correct illumination and

RANGE STATEMENT	
	organisation of workbench regular cleaning and/or decontamination of equipment and work areas
Occupational health and safety (OHS) and environmental management requirements	OHS and environmental management requirements: - all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time - all operations assume the potentially hazardous nature of samples and require standard precautions to be applied - where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health

Unit Sector(s)

Unit sector	Testing

Competency field

Competency field	

Co-requisite units

Co-requisite units		

MSS404050A Undertake process capability improvements

Modification History

New unit, superseding MSACMT450A Undertake process capability improvements* - Equivalent

* New prerequisite *MSS404052A Apply statistics to operational processes* superseding MSACMT452A Apply statistics to processes in manufacturing

Unit Descriptor

This unit of competency covers the skills and knowledge required to make process capability improvements, including analysing data from the process, developing improvements to eliminate variation due to assignable causes, and then implementing actions.

Application of the Unit

This unit applies to a person who reviews a range of process capability data and information, makes/arranges for changes to be made to procedures, equipment or process and then recalculates the process capability and monitors resulting improvement actions. The person will typically be a technical expert, team leader or be in a role where they have sufficient technical understanding of processes in their own work and that of others to be able to suggest and justify process capability improvements.

Process capability may have been determined using either a six sigma or three sigma processes. This unit applies to the application of statistical methods and the determination of capability based on those methods. Other related units may be *MSS404052A Apply statistics to operational processes* and *MSS404053A Use six sigma techniques*

This unit primarily requires the application of skills associated with communication, information gathering and analysis. Initiative, enterprise and problem solving are also required to identify opportunities to improve process capacity. This unit also requires aspects of self-management and learning to validate own analysis.

For a qualitative approach to improvement (one not using statistics) see *MSS403051A Mistake proof an operational process*.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MSS404052A Apply statistics to operational processes

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Obtain required data	1.1	Identify process for study
		1.2	Obtain/organise process to obtain required data/information
2	Analyse information	2.1	Analyse data and determine assignable causes
		2.2	Develop possible improvements to eliminate assignable causes
		2.3	Incorporate own experience and learning into proposed process improvement proposals
		2.4	Develop process improvement proposals
3	Improve process capability	3.1	Obtain required authorities to implement improvements
		3.2	Liaise with relevant people to implement improvements
		3.3	Obtain/organise required data for improved process

- 3.4 Recalculate process capability
- 3.5 Implement revised data collection/processing and new capability information
- 3.6 Monitor improvement actions and make adjustments, as necessary

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- performing relevant mathematical operations
- identifying and using relevant statistical methods
- communicating and explaining data- related changes and procedures to individuals and groups
- negotiating with other employees and managers on proposed improvement actions
- analysing procedures and data to establish variation
- solving problems to root cause where assignable cause of variation is not obvious
- working in a team
- using computer software relevant to required analyses and process

Required knowledge

Required knowledge includes:

- data collection methods
- data processing techniques required
- variability and normal distribution
- three sigma or six sigma processes, as relevant
- random and non-random results (recognition of assignable causes)
- causes of different types of non-random results
- causes of random variation
- process understanding sufficient to translate the data into variations in the process and determine methods of controlling them

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • analyse process information • calculate process capability/trial limits • improve process capability (or organise for it to be improved) • analyse revised process information and recalculate process capability.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence In all cases it is expected that practical assessment will

	be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time

	• process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Process capability	Process capability is: • the measurable ability of a process to reliably produce within calculated limits (the limits depend on the variation of the process)
Variation	All processes have variation. The approach in this unit is to separate random variation (no assignable cause) from non-random variation (which has an assignable cause). By finding and eliminating assignable causes, total variation is reduced and process capability will be improved
Six sigma	Six sigma refers to: • a statistical tool for recording defects and determining capability. Six sigma limits equate to 3.4 defects per million opportunities for each product or service transaction. Six sigma is also used as a general term covering a competitive systems and practices approach. Six sigma training typically covers several units of competency in this Training Package
Three sigma	Three sigma refers to: • a traditional statistical process control. Three sigma limits equate to 3 defects per thousand opportunities for each product or service transaction
Required data	The calculation of three sigma or six sigma limits requires process data. The data required depends on the nature of the limits being calculated
Assignable cause	Any non-random variation is said to have an ‘assignable cause’. The methods of data analysis common to statistical capability analysis as well as other methods of

	root cause analysis should be used to determine the cause of this non-random variation
Improved process capability	Improvements to process capability result from eliminating the causes of non-random variation. The improvements made may be: • as a result of continuous improvement with the process capability being recalculated periodically • as a result of an improvement project with the process capability recalculated as part of that project
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) • government regulations Procedures may be: • written, verbal, computer-based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS404052A Apply statistics to operational processes

Modification History

New unit, superseding MSACMT452A Apply statistics to processes in manufacturing - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to apply statistical theory and principles to the analysis and control of processes and operations.

Application of the Unit

This unit applies to a person working in an organisation applying statistical process control on processes or operations. The statistical process control will usually be used to monitor the processes or operations and determine when action needs to be taken. The appropriate action will then be taken in accordance with standard procedures.

The unit includes applying knowledge of frequency distribution and variation to the data/chart to distinguish between random and non-random variation and assumes understanding of the process and/or equipment to help interpret those results.

This unit primarily requires the application of skills associated with gathering and analysing data and communicating statistical information to others. This unit also has a strong emphasis on problem solving, initiative and enterprise, planning and organising, and self-management to solve problems and manage processes.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Collect process data	1.1	Interpret sampling scheme
		1.2	Obtain measurements in accordance with standard procedures
		1.3	Handle data, as required
2	Interpret data	2.1	Plot data on appropriate control chart
		2.2	Distinguish between random and non-random patterns of results
		2.3	Identify results outside the control limits
		2.4	Recognise situations requiring action
		2.5	Take appropriate action in accordance with standard procedures
		2.6	Determine cost of non-conformance
3	Calculate control limits	3.1	Consult relevant stakeholders to determine appropriate limits
		3.2	Use relevant methods to calculate/revise control limits
		3.3	Plot limits on control chart
		3.4	Explain impact of limit to relevant stakeholders

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- applying a range of sampling procedures
- analysing samples and data for variation, relevance, reliability and representativeness
- problem solving the causes of variation in a process
- communicating with other employees to obtain samples/data and to explain results and limits
- plotting or documenting results
- undertaking calculations, including:
 - basic arithmetic functions
 - mean, range, mean of means, standard deviation (using appropriate calculation aids)
- using statistics to support process and operations control

Required knowledge

Required knowledge includes:

- sampling techniques
- purpose of sampling and measurement
- random, systematic and stratified sampling
- purpose of replication of data for statistical control
- samples, populations, finite and infinite populations and the differences
- methods of calculating means, standard deviations and the like and their purpose in statistical control
- the meaning of broad/narrow frequency distributions/range/standard deviations and skewed distributions in process terms
- concept of limits, including:
 - 1 sigma warning limits
 - 2 sigma warning limits
 - 3 sigma control limits
 - 6 sigma limits
- types of control charts and their applications to different types of process/product and for different purposes
- process causes of variation and typical cause types of non-random variation
- non-process (e.g. measurement) causes of variation
- recognition of stable and unstable processes
- causes of stability/instability in the process

- calculation of control limits/process capability and the applications of different control limits
- the standard distribution curve and confidence limits

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • follow sampling procedures • apply basic statistical processes • analyse data to identify variations and non-conformances • plot or document results.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning

	• reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen)

	• breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Sampling scheme	Sampling scheme may include: • sampling for attributes or sampling for variables • batch, continuous or custom made products • number of items/samples • size of sample • timing of sampling • location of sampling points • type of sample • number/type of measurements to be done on each sample • sampling equipment • measurement/testing equipment/methods
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/ recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) • government regulations Procedures may be: • written, verbal, computer-based or in some other

	format
Handle data	Handle data may include: • calculating means, ranges, mean of means and standard deviations (using appropriate calculation aids) • entering data into a software package • recording data either in writing or electronically • other required manipulations of the data
Control chart	Control charts may include: • run • tally • mean/range • attributes • other relevant charts
Random	Random variation is the term used in statistical control to refer to those variations for which no cause can be found
Non-random	Non-random (also called identifiable cause, assignable cause or special cause) are those variations for which a cause can be found and so the cause of the variation eliminated. Non-random variation may also be used to predict possible breaches of the control limits
Control limits	Control limits (also referred to as process capability) are those limits within which the process will operate if it is 'under control'
Cost of non-conformance	Cost of non-conformance includes: • reprocessing/rework • expediting • unplanned service • excess inventory • complaint handline • downtime • returns • scrap • labour costs • material costs • infrastructure costs/overhead • utility costs
Appropriate limits	Appropriate limits may include:

	• 1 sigma warning limits • 2 sigma warning limits • 3 sigma control limits • 6 sigma limits

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

TLIA3017A Identify products and store to specifications

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to apply product knowledge to the organisation of work operations including identifying and categorising products, matching products to locations based on specified criteria, and assisting individuals to solve stock identification and location problems. Licensing, legislative, regulatory or certification requirements may be applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant regulations and workplace requirements concerning the identification, handling and storage of various categories of products/stock.

Work is performed under some supervision generally within a team environment. It involves the application of product knowledge and an understanding of relevant regulatory requirements to the organisation of work operations in the warehousing, distribution and/or storage industries.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1 Identify and categorise products	1.1 Products are identified and categorised in terms of specified criteria in accordance with workplace procedures
2 Match products to locations based on specified criteria	2.1 Locations for products are determined based on specified criteria 2.2 Labels, inventory systems and other information sources are used to assist in the identification of products, handling and storage requirements
3 Assist individuals to solve stock identification and location problems	3.1 New stock items are identified and particular product information is brought to the attention of relevant personnel 3.2 Stock queries are predicted and team members are assisted to locate and assimilate information relevant to these products 3.3 Personnel are assisted with routine and non-routine stock enquiries with actions taken to update information of products for relevant personnel 3.4 Personnel are encouraged to maintain and build product knowledge through accessing product information and the application of problem solving and information analysis skills
4 Identify appropriate transfer and handling requirements	4.1 Resources used to transfer different products through the storage zones are identified and evaluated 4.2 Work in receipt and despatch areas is supported by identification and reporting of variances 4.3 Stock re-ordering is informed by knowledge of product source, frequency of pick destination (or seasonality) of products and potential for supply problems 4.4 Relevant documentation is completed in accordance with workplace procedures

ELEMENT	PERFORMANCE CRITERIA
5 Contribute to continuous improvement	5.1 Knowledge of customer requirements is used to determine work design 5.2 Potential problems are predicted and notified to appropriate personnel 5.3 Opportunities for improvements to own work organisation are identified

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Australian codes and regulations relevant to the workplace activities
- Relevant OH&S and environmental protection procedures and guidelines
- Workplace procedures and policies relevant to the application of product knowledge to the organisation of workplace operations
- Focus of operation of work systems, equipment, management and site operating systems
- Information on various categories or groups of products including their key characteristics and hazards and the special handling, stacking and storage requirements for each
- Product sources, destinations and potential problems
- Re-ordering procedures and just-in-time planning principles
- Requirements for workplace documentation, inventory systems and records
- Sources of product information
- Strategies to seek out sources of knowledge of products and use this information to inform work
- Types of equipment and storage areas appropriate for different types of goods including perishable, fragile, dangerous, composition/state goods
- Documentation requirements including reports and records concerning damaged or contaminated goods
- Housekeeping standards procedures required in the workplace
- Site layout and obstacles

Required skills:

- Communicate effectively with others when organising workplace activities

Required skills:

- Access, read and interpret product information, policies and regulatory requirements relevant to workplace operations
- Complete documentation related to the organisation of work activities
- Work collaboratively with others when organising workplace activities
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems that may arise when organising workplace activities in accordance with regulatory requirements and workplace procedures
- Use information on products/stock to determine, plan and organise processes used for receipt, storage, goods movement, despatch, stock levels, re-ordering processes
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in products and services in accordance with standard operating procedures
- Organise and monitor the use of personal protective equipment conforming to industry and OH&S standards
- Select and use relevant communication, computing and office equipment when organising workplace activities

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
 - the underpinning knowledge and skills
 - relevant legislation and workplace procedures

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or

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	other simulated practical and knowledge assessment, and/or access to an appropriate range of relevant operational situations in the workplace
	- In both real and simulated environments, access is required to: - relevant and appropriate materials and equipment, and - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
Method of assessment	- As a minimum, assessment of knowledge must be conducted through appropriate assessments using written/practical/oral assessments - Practical assessment must occur: - through activities in an appropriately simulated environment , and/or - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Work may be conducted:	- in a range of work environments - by day or night
Customers may be:	internal or external
Workplaces may comprise:	large, medium or small worksites
Workplace activities being organised may include but are not limited to:	- receival - storage - goods/stock movement - despatch - stock levels - re-ordering processes
Work may be conducted in:	- restricted spaces - exposed conditions

RANGE STATEMENT

Goods may involve:	• controlled or open environments • special handling, location, storage and/or packaging requirements, including temperature controlled goods and dangerous goods
Modes of transfer may be:	• manual or motorised
Storage types may include but are not limited to:	• bin/binning systems • rack refrigeration/freezers/cold rooms • marked floor space • containers • racks and racking systems • block/stacks • pallets
Inventory systems may be:	• automated • manual • paper-based • computerised • microfiche
Categories or groups of products/stock may include:	• small parts • perishable goods • overseas export • dangerous goods • refrigerated products • temperature controlled stock • fragile goods
The characteristics of products/stock may include:	• small parts • toxicity • flammability • form • weight • size • state • perishability • fragility • security risk
Labelling systems may include but are not limited to:	• batch code • bar code • identification numbering systems • serial numbers • symbols for safe handling

RANGE STATEMENT

Hazards in the work area may include:

- ADG and HAZCHEM Codes
- chemicals
- dangerous or hazardous substances
- movements of equipment, goods and materials
- oil or water on floor
- a fire or explosion
- damaged packaging or pallets
- debris on floor
- faulty racking
- poorly stacked pallets
- faulty equipment

Communication in the work area may include:

- phone
- electronic data interchange (EDI)
- fax
- email
- internet
- RF systems
- oral, aural or signed communications

Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:

- company procedures
- enterprise procedures
- organisational procedures
- established procedures

Personal protective equipment may include:

- gloves
- safety headwear and footwear
- safety glasses
- two-way radios
- high visibility clothing

Consultative processes may involve:

- other employees and supervisors
- suppliers, customers and clients
- relevant authorities and institutions
- management and union representatives
- industrial relations and OH&S specialists
- other maintenance, professional or technical staff

Information/documents may include:

- goods identification numbers and codes
- manifests, picking slips, merchandise transfers, stock requisitions and bar codes, and container identification/serial number
- codes of practice and regulations relevant to workplace operations
- Australian and international regulations and codes of

RANGE STATEMENT

Applicable regulations and legislation may include:

- practice for the handling, stacking and transport of dangerous goods and hazardous substances
- operations manuals, job specifications and induction documentation
- manufacturers specifications for equipment
- workplace procedures and policies
- supplier and/or client instructions
- dangerous goods declarations and material safety data sheets (where applicable)
- award, enterprise bargaining agreement, other industrial arrangements
- relevant Australian standards and certification requirements
- quality assurance procedures
- emergency procedures
- relevant codes and regulations for the packaging of goods
- Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including:
 - Australian and International Dangerous Goods Codes
 - Australian and International Explosives Codes
- licence, patent or copyright arrangements
- water and road use and licence arrangements
- export/import/quarantine/bond requirements
- marine orders
- relevant state/territory OH&S and environmental protection legislation
- workplace relations regulations
- workers compensation regulations

Unit Sector(s)

Not Applicable

Competency Field

Competency Field

A - Handling Cargo/Stock

TLIA3023A Coordinate stocktakes

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to coordinate stocktakes in accordance with workplace requirements including planning stocktakes, coordinating stocktake activities, identifying stock discrepancies, and adjusting documentation in accordance with workplace procedures and relevant regulatory requirements. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant regulations and workplace requirements when coordinating stocktakes.

Work is performed under some supervision generally within a team environment. It involves the application of product knowledge and an understanding of relevant workplace procedures and regulatory requirements when coordinating stocktakes as part of work activities in the warehousing, distribution and/or storage industries.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1 Plan stocktake

- 1.1 Goods to be counted and appropriate inventory systems are identified
- 1.2 Required resources including equipment, record keeping systems and personnel are identified
- 1.3 Members of the team are instructed and assisted
- 1.4 Team members are allocated to particular tasks and zones and given clear directions for work requirements
- 1.5 Sequence and operations of the stocktake are planned in a time effective manner

2 Coordinate stocktake

- 2.1 Stocktaking and cyclical counts are coordinated in accordance with workplace policies and procedures
- 2.2 Inventory data is interpreted
- 2.3 Inventory data is confirmed to match stock
- 2.4 Stock levels are accurately counted and documented

3 Identify stock discrepancies

- 3.1 Discrepancies in type, number and quality of stock are accurately recorded and documented
- 3.2 Possible reasons for discrepancies are identified
- 3.3 Products stored in inappropriate storage locations are relocated and stock records are adjusted in accordance with workplace procedures

4 Adjust documentation

- 4.1 Inventory data is reconciled to match warehouse stock in accordance with regulations, workplace practices, policies and procedures
- 4.2 Information is reconciled with audit requirements
- 4.3 Workplace documentation is completed

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Australian codes and regulations relevant to the coordination of stocktakes
- Relevant OH&S and environmental protection procedures and guidelines
- Workplace procedures and policies for the coordination of stocktakes
- Focus of operation of work systems, equipment, management and site operating systems for the conduct of stocktakes
- Workplace processes for records management and the production of stocktake reports
- Principles and functions of stocktakes
- Problems that may occur when coordinating a stocktake and appropriate action that can be taken
- Computer records and documentation requirements for the coordination of stocktakes
- Housekeeping standards procedures required in the workplace
- Site layout

Required skills:

- Communicate effectively with others when coordinating stocktakes
- Read and comprehend simple statements in English
- Read and interpret instructions, procedures and labels relevant to the coordination of stocktakes
- Complete documentation related to the coordination of stocktakes
- Work collaboratively with others when coordinating stocktakes
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems that may occur when coordinating stocktakes in accordance with regulatory requirements and workplace procedures
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or

Required skills:

damage to goods or equipment

- Operate and adapt to differences in stock and equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Select and use relevant communications, computing and office equipment when coordinating stocktakes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
 - the underpinning knowledge and skills
 - relevant legislation and workplace procedures
 - other relevant aspects of the range statement

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
 - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
 - relevant and appropriate materials and equipment, and
 - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation

EVIDENCE GUIDE

- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
 - through activities in an appropriately simulated environment at the registered training organisation, and/or
 - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Work may be conducted:	• in a range of work environments • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments
Equipment used in stocktaking may include:	• calculators • scanners • hand-held computers
Inventory systems may be:	• automated • manual • paper-based • computerised • microfiche
Categories or groups of products/stock may include:	• small parts • perishable goods • overseas export • dangerous goods • refrigerated products • temperature controlled stock • fragile goods

RANGE STATEMENT

The characteristics of products/stock may include:

- small parts
- toxicity
- flammability
- form
- weight
- size
- state
- perishability
- fragility
- security risk

Labelling systems may include:

- batch code
- bar code
- identification numbering systems
- serial numbers
- symbols for safe handling
- ADG and HAZCHEM Codes

Hazards in the work area may include:

- chemicals
- dangerous or hazardous substances
- movements of equipment, goods and materials
- oil or water on floor
- a fire or explosion
- damaged packaging or pallets
- debris on floor
- faulty racking
- poorly stacked pallets
- faulty equipment

Communication in the work area may include:

- phone
- electronic data interchange (EDI)
- fax
- email
- internet
- RF systems
- oral, aural or signed communications

Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:

- company procedures
- enterprise procedures
- organisational procedures
- established procedures

Personal protective equipment may include:

- gloves
- safety headwear and footwear

RANGE STATEMENT

Consultative processes may involve:

- safety glasses
- two-way radios
- high visibility clothing
- other employees and supervisors
- suppliers, customers and clients
- relevant authorities and institutions
- management and union representatives
- industrial relations and OH&S specialists
- other maintenance, professional or technical staff

Information/documents may include:

- goods identification numbers and codes
- manifests, picking slips, merchandise transfers, stock requisitions and bar codes
- codes of practice and regulations relevant to the identification, handling and stacking of goods
- Australian and international regulations and codes of practice for the handling, stacking and transport of dangerous goods and hazardous substances
- operations manuals, job specifications and induction documentation
- manufacturers specifications for equipment
- workplace procedures and policies
- supplier and/or client instructions
- dangerous goods declarations and material safety data sheets (where applicable)
- award, enterprise bargaining agreement, other industrial arrangements
- relevant Australian standards and certification requirements
- quality assurance procedures
- emergency procedures

Applicable regulations and legislation may include:

- relevant codes and regulations for the packaging of goods
- Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including:
 - Australian and International Dangerous Goods Codes
 - Australian and International Explosives Codes
- licence, patent or copyright arrangements
- water and road use and licence arrangements
- export/import/quarantine/bond requirements
- relevant state/territory OH&S and environmental protection legislation

RANGE STATEMENT

- workplace relations regulations
- workers compensation regulations

Unit Sector(s)

Not Applicable

Competency Field

Competency Field A - Handling Cargo/Stock

TLIA4028A Assess and monitor optimum stock levels

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to assess and monitor optimum stock levels in accordance with workplace requirements including assessing projected demand, assessing variables that impact upon optimum stock levels, determining optimum inventory levels, and monitoring optimum inventory levels. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant regulations and workplace requirements concerning stock control operations.

Work is performed under general guidance on progress and outcomes of work. It requires the exercise of discretion and judgement for self and others in planning and using resources, services and processes to achieve required outcomes within organisational policy and procedures. A range of opportunities may be used to develop the work area and to support the development of work systems and innovative strategies to deal with contingencies and to encourage the achievement of the organisation's goals and key performance objectives.

Work involves the application of product knowledge and an understanding of relevant workplace procedures and regulatory requirements when assessing and monitoring optimum stock levels as part of work activities in the warehousing, distribution and/or storage industries.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1 Assess projected demand

- 1.1 Information/data from sales plan or stock movement is analysed
- 1.2 Projected high and low volume periods are determined from the analysis of sales plan and/or stock movement data
- 1.3 Seasonal nature of stock demand is determined from the analysis of sales plan and/or stock movement data
- 1.4 Required inventory levels at different production and sales cycle stages are determined from the analysis of sales plan and/or stock movement data

2 Assess variables that impact upon optimum stock levels

- 2.1 Stock manufacturing/supply and consignment delivery lead times are determined
- 2.2 Internal processing and distribution times are determined
- 2.3 Spoilage and obsolescence times are calculated (where applicable)
- 2.4 Maximum stock carrying capacity is assessed
- 2.5 Physical and human resources are assessed in relation to projected required stock levels
- 2.6 Contingencies are developed for abnormal distribution

ELEMENT	PERFORMANCE CRITERIA
	stoppages/slow-downs to supply chain
3 Determine optimum inventory levels	3.1 Production and sales cycle stages are correlated to stock manufacturing supply and distribution lead times 3.2 Safety stock levels are calculated 3.3 Optimum inventory levels are identified
4 Monitor optimum inventory levels	4.1 Inventory benchmarks are continually compared to current and known future sales turnover/production requirements 4.2 Adjustments to inventory levels are undertaken in accordance with reassessed sales turnover/production requirements, workplace procurement processes and within scope of authority 4.3 Changes and/or requests for adjustments to inventory levels are documented in accordance with workplace policies 4.4 Resources are assembled in accordance with identified optimum inventory levels

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Australian codes and regulations relevant to the optimisation of stock levels
- Relevant OH&S and environmental protection procedures and guidelines
- Workplace procedures and policies for the assessment and monitoring of optimum stock levels
- Focus of operation of supply arrangements, resources, management and workplace operating systems
- Purpose and use of key information required when optimising stock levels, including supply requirements, supplier information, enterprise contract procedures, sales plan, and distribution times
- Workplace business policies and plans including procedures for maintenance of confidentiality
- Computer records/documentation requirements when assessing and monitoring optimum stock levels
- Problems that may occur when assessing and monitoring optimum stock levels and appropriate action that can be taken to resolve the problems
- Worksite layout and organisational structure

Required skills:

- Communicate effectively with others when assessing and monitoring optimum stock levels
- Read and interpret instructions, procedures, policies, procedures and instructions relevant to the assessment and monitoring of optimum stock levels
- Complete documentation related to the assessment and monitoring of optimum stock levels
- Work collaboratively with others when assessing and monitoring optimum stock levels
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions when assessing and monitoring optimum stock levels in accordance with regulatory requirements and workplace procedures
- Plan and organise resource availability including the competencies of individuals in a team or group
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Select and apply relevant technology, information systems and procedures when assessing and monitoring optimum stock levels

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
 - the underpinning knowledge and skills
 - relevant legislation and workplace procedures
 - other relevant aspects of the range statement

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment,

EVIDENCE GUIDE

	and/or
	access to an appropriate range of relevant operational situations in the workplace
	- In both real and simulated environments, access is required to: - relevant and appropriate materials and equipment, and - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
Method of assessment	- Assessment of this unit must be undertaken by a registered training organisation - As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests - Practical assessment must occur: - through activities in an appropriately simulated environment at the registered training organisation, and/or - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Work may involve:	- twenty-four hour operation - in a range of work environments - by day or night
Customers may be:	internal or external
Workplaces may comprise:	large, medium or small worksites
Work may be conducted in:	- limited or restricted spaces - exposed conditions - controlled or open environments
Work:	- applies to predominantly manual operations - does not include a total computer generated purchasing system operation

RANGE STATEMENT

Inventory benchmarks may be:	• periodic, monthly or annual
Lead times may vary in accordance with:	• type of transport mode(s) • processing time • regulatory requirements • freight disputations • customs regulations • scarcity of resource
Information used when assessing and monitoring optimum stock levels may include:	• supply requirements • supplier information • workplace contract procedures • sales plan • distribution times
Consultative processes may involve:	• other employees and supervisors • suppliers, customers and clients • relevant authorities and institutions • management and union representatives • industrial relations and OH&S specialists • other maintenance, professional or technical staff
Communication in the work area may include:	• phone • electronic data interchange (EDI) • fax • email • internet • RF systems • oral, aural or signed communications
Inventory systems may be:	• automated • manual • paper-based • computerised • microfiche
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Information/documents may include:	• relevant workplace quality specifications, policies and procedures • Australian regulations and codes of practice relevant to stock management • manufacturers specifications and/or suppliers handling and

RANGE STATEMENT

Applicable regulations and legislation may include:	- storage advice • supplier and/or client instructions • workplace business policies and plans including procedures for maintenance of confidentiality • operations manuals, job specifications and induction documentation • ADG Code and associated regulations • material safety data sheets • relevant Australian standards and certification requirements • conditions of service, legislation and industrial agreements including award details, enterprise bargaining agreement, other industrial arrangements • emergency procedures • codes and regulations relevant to the optimisation of stock levels including the ADG Code • relevant state/territory OH&S and environmental protection legislation • licence, patent or copyright arrangements • water and road use and licence arrangements • export/import/quarantine/bond requirements • workplace relations regulations • workers compensation regulations

Unit Sector(s)

Not Applicable

Competency Field

Competency Field	A - Handling Cargo/Stock

TLID3036A Lift and move load using a mobile crane

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to lift and move a load using a non-slewing mobile crane or a slewing mobile crane. It includes operating the mobile crane to complete job requirements, monitoring lift conditions, implementing shut-down procedures, packing up crane after operations, and completing all required job records. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the licence/permit requirements and regulations of the relevant state/territory authorities pertaining to operations of mobile cranes.

Work is performed with limited or minimum supervision, with limited accountability and responsibility for self and others in achieving the prescribed outcomes. It involves the application of routine principles, procedures and regulations to lift and move loads using slewing and non-slewing mobile cranes in a variety of operational contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1 Operate mobile crane

- 1.1 In ascent and descent to/from crane correct use is made of the means provided in accordance with codes of practice and workplace procedures
- 1.2 Planned hazard control strategies are implemented
- 1.3 Required signals are correctly given, interpreted and followed in accordance with appropriate workplace procedures
- 1.4 Boom is positioned to ensure load to be lifted is plumbed under hook
- 1.5 Load is hoisted and lowered into position using crane movements in accordance with the appropriate workplace procedures
- 1.6 Crane controls are operated smoothly
- 1.7 Crane is shut down and secured during periods of non-operation according to manufacturers specifications and workplace procedures

2 Monitor lift conditions

- 2.1 Load is constantly monitored to ensure load and structural stability
- 2.2 Conditions which may affect the continuing stability of the crane are identified and monitored
- 2.3 Unplanned situations are responded to in line with workplace procedures in a manner that minimises risk to personnel and equipment
- 2.4 Dogger is advised of any new information which affects the lift
- 2.5 Any necessary changes to job plan are discussed and confirmed with rest of crew
- 2.6 Advice is sought from supervisor where there is doubt about

ELEMENT	PERFORMANCE CRITERIA
3 Implement shut-down procedures	correct response to unanticipated conditions, or conflict with customer request 2.7 Supervisor/allocator is advised of any concern about completing the job within timeframe
	3.1 The relevant motion locks and brakes are applied 3.2 Crane is shut down using the correct sequence of procedures in accordance with manufacturers specifications and workplace procedures
	3.3 Routine post-operational equipment checks are carried out in accordance with manufacturers specifications
4 Pack up crane	4.1 Crane is de-rigged with other crane personnel in accordance with manufacturers instructions
	4.2 All lifting equipment and crane components are checked in consultation with crane personnel for any signs of deterioration or damage in accordance with the appropriate Australian Standard
	4.3 Damaged or worn equipment is segregated and reported to an authorised person for testing/repair/destruction
	4.4 Crane and equipment are correctly stowed and secured in accordance with manufacturers instructions and the appropriate Australian Standard
5 Complete job records	5.1 Customer feedback is sought regarding satisfaction with the completed job, and any areas of concern are reported according to workplace procedures
	5.2 Customer's signature on job completion documentation is obtained
	5.3 Required workplace records are updated accurately and promptly and processed according to workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant road rules, regulations, permit and licence requirements pertaining to mobile crane operation
- Relevant OH&S and environmental procedures and regulations

REQUIRED KNOWLEDGE AND SKILLS

- Mobile crane applications, capacities, configurations, safety hazards and control mechanisms
- Risks and hazards involved in mobile crane operation, and associated action that can be taken to eliminate or minimise the risk
- Workplace procedures concerning the operation of a mobile crane at a worksite
- Problems that may occur during a lift, and associated action that can be taken to address the problems concerned
- Communication systems used during a lift
- Focus of operation of work systems and equipment

Required skills:

- Communicate effectively with others when lifting and moving a load using a mobile crane
- Read and interpret instructions, procedures, information and signs relevant to the lifting and moving of a load using a mobile crane
- Complete documentation related to the lifting and moving of a load using a mobile crane
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when lifting and moving a load using a mobile crane
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when lifting and moving a load using a mobile crane in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unanticipated situations that may arise when lifting and moving a load using a mobile crane
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the lifting and moving of a load using a mobile crane
- Plan own work including predicting consequences and identifying improvements
- Prioritise and multi-task work
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Monitor performance of equipment

Required skills:

- Service equipment in terms of maintenance schedule and standard operating procedures
- Check and replenish fluids and carry out lubrication processes in the course of work activities

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
 - applying the underpinning knowledge and skills
 - applying relevant legislation and workplace procedures
 - complying with OH&S licensing legislation
 - applying risk assessment and management procedures for mobile crane operations
 - effectively completing the pre-operational checks, positioning, stabilising, set-up, post-operational checks of a mobile crane
 - using mathematical procedures to determine the weight of a load and the lifting equipment required for the lift
 - using load charts to determine the limitations of the crane and/or crane set-up required
 - operating the crane including all functions to their maximum extension in the lifting and moving of a load

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
 - access to an appropriate range of relevant operational situations in the workplace

EVIDENCE GUIDE

- In both real and simulated environments, access is required to:
 - relevant and appropriate materials and equipment, and
 - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
- Method of assessment**
 - As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
 - Practical assessment must occur:
 - through appropriately simulated activities at the registered training organisation, and/or
 - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Operations may be conducted:	• by day or night • in a variety of weather conditions
Environment may include movement of:	• equipment • goods • materials and vehicular traffic
Customers may be:	• internal or external
Mobile crane may be any slewing and non-slewing crane and may be involved in work in a range of industry sectors including:	• construction and demolition • manufacturing • waterfront • mining • primary industry • utilities (electricity, gas, water) • arboricultural • swimming pool • quarrying
Hazards may include:	• power lines • noise, light, energy sources

RANGE STATEMENT

	• overhead service lines • surrounding buildings, structures, facilities • underground services • obstructions • uneven or unstable ground and recently filled trenches • stationary and moving machinery and equipment • hazardous or dangerous materials • traffic hazards and congestion
Hazard management is consistent with:	• the principle of hierarchy of control with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment
Personal protective equipment may include:	• gloves • safety headwear and footwear • sunscreen, sunglasses and safety glasses • two-way radios • high visibility clothing
Consultative processes may involve:	• other employees and supervisors • management • union representatives • clients • industrial relations and OH&S specialists • other professional or technical staff
Requirements for access and/or lift may include:	• site restrictions and procedures • authorities and permits • hours of operation • induction • slings, chains, nets, brackets and other specialised lifting equipment • noise restrictions • personal protective equipment • support trucks • additional gear and equipment • communications equipment
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures • site procedures
Documentation/records may	• site plans

RANGE STATEMENT

include:

- Safe Working Load (SWL) and Working Load Limit (WLL)
- operations manuals including load charts and crane and rigging manuals
- induction documentation
- competency standards and training materials
- job specifications and procedures
- manufacturers specifications
- workplace operating procedures and policies
- supplier and/or client instructions
- communications technology equipment, oral, aural or signed communications
- personal and work area work procedures and practices
- conditions of service, legislation and industrial agreements including:
 - workplace agreements and awards
 - occupational health and safety procedures
 - standards and certification requirements
 - quality assurance procedures
 - emergency procedures

Applicable procedures and codes may include:

- relevant state/territory regulations and licence/permit requirements pertaining to mobile cranes
- relevant Australian Standards and certification requirements
- relevant state/territory road rules
- relevant state/territory OH&S legislation
- relevant state/territory fatigue management regulations
- relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field

D - Load Handling

