Australian Government

MEM30219 Certificate III in Engineering - Mechanical Trade

Release 3

MEM30219 Certificate III in Engineering - Mechanical Trade

Modification History

Release 3. Elective units updated. Supersedes and is equivalent to MEM30219 Certificate III in Engineering - Mechanical Trade (Release 2).

Release 2. Mandatory training contract pathway added.

Release 1. Supersedes and is equivalent to MEM30205 Certificate III in Engineering – Mechanical Trade

Qualification Description

This qualification defines the skills and knowledge required of an engineering tradesperson – mechanical within metal, engineering, manufacturing and associated industries. The qualification has been specifically developed for apprentices in the above trade.

This qualification must be undertaken through a Training Contract or through formal trade recognition assessment processes.

The skills associated with this qualification are intended to apply to a wide range of mechanical trade work, including undertaking fitting, assembly, manufacture, installation, modification, testing, fault finding, maintenance and service of mechanical equipment, machinery and the use of machine tools.

This qualification is designed to provide an industry recognised skills profile related to trade work as an Engineering Tradesperson - Mechanical.

Assessment of some units of competency must, where indicated, include evidence of the candidate's performance in a functioning workplace where there is a sufficient range of appropriate tasks and materials to cover the scope of application of those units. All outcomes must reflect the standard of performance inherent in the job.

No licensing, legislative or certification requirements apply to this qualification at the time of publication. However, in some jurisdictions units in this qualification may relate to licensing or regulatory requirements. Local regulations should be checked.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To be awarded the MEM30219 Certificate III in Engineering - Mechanical Trade, units of competency to the value of 96 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Groups A, B and C electives as described below

- elective units of competency to a maximum value of 23 points from Group D to bring the total value to 96 points.

To be awarded the MEM30219 Certificate III in Engineering - Mechanical Trade (Machining), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group A electives as described below
- elective units of competency to a maximum value of 23 points from Group D to bring the total value to 96 points.

To be awarded the MEM30219 Certificate III in Engineering - Mechanical Trade (Fitting), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group B electives as described below
- elective units of competency to a maximum value of 23 points from Group D to bring the total value to 96 points.

To be awarded the MEM30219 Certificate III in Engineering - Mechanical Trade (Fitting/machining), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group C electives as described below
- elective units of competency to a maximum value of 23 points from Group D to bring the total value to 96 points.

Appropriate Group D elective units to the value of 8 points may be chosen from this Training Package, other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate III. Only select units that would be suitable for occupational outcomes in a mechanical trade environment.

Registered Training Organisations (RTOs) must seek a determination from the industry parties in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses. Determination of points requests are to be submitted to the industry parties through Innovation and Business Skills Australia (IBSA) Manufacturing. Refer to the MEM Companion Volume Implementation Guide for information on determination of unit points values.

Prerequisites

Points associated with prerequisites count towards the total. Units with prerequisite requirements are marked with an asterisk (refer to the individual units for details). All prerequisites are included in the units listed.

CORE UNITS

Unit code	Unit title	P	Prerequisites
MEM09002	Interpret technical drawing	4	*
MEM11011	Undertake manual handling	2	*
MEM12023	Perform engineering measurements	5	*
MEM12024	Perform computations	3	*
MEM13015	Work safely and effectively in manufacturing and engineering	2	
MEM14006	Plan work activities	4	*
MEM16006	Organise and communicate information	2	*
MEM16008	Interact with computing technology	2	*
MEM17003	Assist in the provision of on-the-job training	2	*
MEM18001	Use hand tools	2	*
MEM18002	Use power tools/hand held operations	2	*
MSMENV272	Participate in environmentally sustainable work practices	3	

ELECTIVE UNITS

- Packaging for a generic qualification – choose a minimum value of 40 points in **any combination** from Groups A, B and C
- Packaging for a trade specialisation – choose a minimum value of 40 points from **one of either** Group A or B or C.

Group A - Machining Trade specialisation

Unit code	Unit title	P	Prerequisites
MEM05005	Carry out mechanical cutting	2	*

MEM07005	Perform general machining	8	*
MEM07006	Perform lathe operations	4	*
MEM07007	Perform milling operations	4	*
MEM07008	Perform grinding operations	4	*
MEM07009	Perform precision jig boring operations	4	*
MEM07010	Perform tool and cutter grinding operations	4	*
MEM07011	Perform complex milling operations	4	*
MEM07012	Perform complex grinding operations	4	*
MEM07013	Perform machining operations using horizontal and vertical boring machines	4	*
MEM07014	Perform electro-discharge machining (EDM) operations	4	*
MEM07015	Set computer controlled machines and processes	2	*
MEM12003	Perform precision mechanical measurement	2	*
MEM12006	Mark off/out (general engineering)	4	*
MEM18003	Use tools for precision work	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group B - Fitting Trade specialisation

MEM05005	Carry out mechanical cutting	2	*
MEM07005	Perform general machining	8	*
MEM07006	Perform lathe operations	4	*
MEM10006	Install machine/plant	4	*
MEM12006	Mark off/out (general engineering)	4	*
MEM18003	Use tools for precision work	4	*
MEM18004	Maintain and overhaul mechanical equipment	4	*
MEM18005	Perform fault diagnosis, installation and removal of bearings	4	*

MEM18006	Perform precision fitting of engineering components	6	*
MEM18007	Maintain and repair mechanical drives and mechanical transmission assemblies	4	*
MEM18008	Balance equipment	2	*
MEM18009	Perform precision levelling and alignment of machines and engineering components	4	*
MEM18012	Perform installation and removal of mechanical seals	2	*
MEM18013	Perform gland packing	2	*
MEM18018	Maintain pneumatic system components	4	*
MEM18020	Maintain hydraulic system components	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group C - Fitting/Machining Trade specialisation

MEM05005	Carry out mechanical cutting	2	*
MEM07005	Perform general machining	8	*
MEM07006	Perform lathe operations	4	*
MEM07007	Perform milling operations	4	*
MEM07008	Perform grinding operations	4	*
MEM07010	Perform tool and cutter grinding operations	4	*
MEM07013	Perform machining operations using horizontal and vertical boring machines	4	*
MEM07014	Perform electro-discharge machining (EDM) operations	4	*
MEM07015	Set computer controlled machines and processes	2	*
MEM10006	Install machine/plant	4	*
MEM12003	Perform precision mechanical measurement	2	*
MEM12006	Mark off/out (general engineering)	4	*
MEM18003	Use tools for precision work	4	*

MEM18005	Perform fault diagnosis, installation and removal of bearings	4	*
MEM18006	Perform precision fitting of engineering components	6	*
MEM18007	Maintain and repair mechanical drives and mechanical transmission assemblies	4	*
MEM18008	Balance equipment	2	*
MEM18009	Perform precision levelling and alignment of machines and engineering components	4	*
MEM18012	Perform installation and removal of mechanical seals	2	*
MEM18013	Perform gland packing	2	*
MEM18018	Maintain pneumatic system components	4	*
MEM18020	Maintain hydraulic system components	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group D - General electives

MEM05004	Perform routine oxy fuel gas welding	2	*
MEM05005	Carry out mechanical cutting	2	*
MEM05006	Perform brazing and/or silver soldering	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM05095	Weld using flame powder spraying	4	*
MEM06007	Perform basic incidental heat/quenching, tempering and annealing	2	*
MEM07002	Perform precision shaping/planing/slotting operations	4	*
MEM07005	Perform general machining	8	*
MEM07006	Perform lathe operations	4	*

MEM07007	Perform milling operations	4	*
MEM07008	Perform grinding operations	4	*
MEM07009	Perform precision jig boring operations	4	*
MEM07010	Perform tool and cutter grinding operations	4	*
MEM07011	Perform complex milling operations	4	*
MEM07012	Perform complex grinding operations	4	*
MEM07013	Perform machining operations using horizontal and vertical boring machines	4	*
MEM07014	Perform electro-discharge machining (EDM) operations	4	*
MEM07015	Set computer controlled machines and processes	2	*
MEM07016	Set and edit computer controlled machines and processes	4	*
MEM07021	Perform complex lathe operations	4	*
MEM07030	Perform basic metal spinning lathe operations	8	*
MEM07031	Perform complex metal spinning lathe operations	4	*
MEM07032	Use workshop machines for basic operations	2	*
MEM07040	Set multistage integrated processes	6	*
MEM08010	Manually finish/polish materials	6	*
MEM08011	Prepare surfaces using solvents and/or mechanical means	2	*
MEM08014	Apply protective coatings (basic)	4	*
MEM09003	Prepare basic engineering drawing	8	*
MEM09011	Apply basic engineering design concepts	6	*
MEM10002	Terminate and connect electrical wiring	3	*
MEM10004	Enter and change programmable controller operational parameters	2	*
MEM10005	Commission programmable controller programs	4	*
MEM10006	Install machine/plant	4	*

MEM10010	Install pipework and pipework assemblies	4	*
MEM11010	Operate mobile load shifting equipment	4	*
MEM11016	Order materials	2	*
MEM11022	Operate fixed/moveable load shifting equipment	4	*
MEM12002	Perform electrical/electronic measurement	2	*
MEM12003	Perform precision mechanical measurement	2	*
MEM12006	Mark off/out (general engineering)	4	*
MEM12019	Measure components using coordinate measuring machines	4	*
MEM12020	Set and operate coordinate measuring machines	2	*
MEM13001	Perform emergency first aid	1	*
MEM13003	Work safely with industrial chemicals and materials	2	*
MEM13019	Undertake work health and safety activities in the workplace	3	
MEM15001	Perform basic statistical quality control	2	*
MEM15003	Use improvement processes in team activities	4	*
MEM15004	Perform inspection	2	*
MEM16005	Operate as a team member to conduct manufacturing, engineering or related activities	2	*
MEM18003	Use tools for precision work	4	*
MEM18004	Maintain and overhaul mechanical equipment	4	*
MEM18005	Perform fault diagnosis, installation and removal of bearings	4	*
MEM18006	Perform precision fitting of engineering components	6	*
MEM18007	Maintain and repair mechanical drives and mechanical transmission assemblies	4	*
MEM18008	Balance equipment	2	*
MEM18009	Perform precision levelling and alignment of machines and engineering components	4	*

MEM18010	Perform equipment condition monitoring and recording	4	*
MEM18011	Shut down and isolate machines/equipment	2	*
MEM18012	Perform installation and removal of mechanical seals	2	*
MEM18013	Perform gland packing	2	*
MEM18018	Maintain pneumatic system components	4	*
MEM18020	Maintain hydraulic system components	4	*
MEM18049	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.	3	*
MEM18055	Dismantle, replace and assemble engineering components	3	*
MEM24001	Perform basic penetrant testing	2	*
MEM24003	Perform basic magnetic particle testing	2	*
MEM24005	Perform basic eddy current testing	2	*
MEM24007	Perform ultrasonic thickness testing	2	*
MSMENV472	Implement and monitor environmentally sustainable work practices	4	
TLILIC0003	Licence to operate a forklift truck	0	
TLILIC0024	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	1	

Qualification Mapping Information

Release 3. Supersedes and is equivalent to MEM30219 Certificate III in Engineering - Mechanical Trade (Release 2).

Release 2. Supersedes and is equivalent to MEM30219 Certificate III in Engineering – Mechanical Trade (Release 1).

Release 1. Supersedes and is equivalent to MEM30205 Certificate III in Engineering – Mechanical Trade

Links

Companion Volume Implementation Guides are available on VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2