



Australian Government

MEM31519 Certificate III in Engineering - Toolmaking Trade

Release 1

MEM31519 Certificate III in Engineering - Toolmaking Trade

Modification History

Release 1. New qualification. Supersedes but is not equivalent to MEM30205 Certificate III in Engineering – Mechanical Trade.

Qualification Description

This qualification defines the skills and knowledge required of an engineering tradesperson - toolmaking within metal, engineering, manufacturing and associated industries. The qualification has been specifically developed for apprentices in the above trade. The qualification packaging has been developed on an assumption that competency will be developed through a combination of on and off-the-job learning strategies such as those delivered through a formal apprenticeship. The qualification may also be achieved through formal skills recognition assessment processes.

The skills associated with this qualification are intended to apply to a wide range of toolmaking trade work, including the manufacture, modification and maintenance of tooling.

This qualification is designed to provide an industry recognised skills profile related to trade work as a toolmaking tradesperson. Skills development should be undertaken through an Australian Apprenticeship arrangement where the mix of on and off-the-job training would be specified in the Training Plan associated with the Contract of Training between the employer and apprentice.

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 require a license or relate to regulatory requirements. Licensing and regulatory information is included in the relevant units of competence.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To be awarded the MEM31519 Certificate III in Engineering – Toolmaking Trade units of competency to the value of 108 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 82 points)
- elective units of competency to a minimum value of 8 points from Group A
- elective units of competency to a maximum value of 18 points from Group B to bring the total value of the qualification to 108 points.

Appropriate Group B 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 toolmaking 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 of competency

Unit code	Unit title	P	Pre req
MEM06007	Perform basic incidental heat/quenching, tempering and annealing	2	*
MEM07005	Perform general machining	8	*
MEM07006	Perform lathe operations	4	*
MEM07007	Perform milling operations	4	*
MEM07008	Perform grinding operations	4	*
MEM09002	Interpret technical drawing	4	*
MEM11011	Undertake manual handling	2	*
MEM12003	Perform precision mechanical measurement	2	*
MEM12006	Mark off/out (general engineering)	4	*
MEM12023	Perform engineering measurements	5	*
MEM12024	Perform computations	3	*
MEM12026	Perform advanced trade calculations in a manufacturing, engineering or related environment	4	*
MEM13015	Work safely and effectively in manufacturing and engineering	2	
MEM14006	Plan work activities	4	*

Unit code	Unit title	P	Pre req
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	*
MEM18003	Use tools for precision work	4	*
MEM18006	Perform precision fitting of engineering components	6	*
MEM18015	Maintain tools and dies	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*
MSMENV272	Participate in environmentally sustainable work practices	3	

Elective units of competency

Group A - Toolmaking Trade Specialisation

Unit code	Unit title	P	Pre req
MEM07018	Write basic NC and CNC programs	4	*
MEM07022	Program CNC wire cut machines	2	*
MEM18014	Manufacture press tools and gauges	8	*
MEM18097	Manufacture cavity dies	8	*

Group B

Unit code	Unit title	P	Pre req
MEM05004	Perform routine oxy fuel gas welding	2	*
MEM05005	Carry out mechanical cutting	2	*

Unit code	Unit title	P	Pre req
MEM05006	Perform brazing and/or silver soldering	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05041	Weld using flame powder spraying	4	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM05051	Select welding processes	2	*
MEM05052	Apply safe welding practices	4	*
MEM05055	Weld using oxy fuel gas welding process	4	*
MEM06003	Carry out heat treatment	6	*
MEM06004	Select heat treatment processes and test finished product	6	*
MEM07002	Perform precision shaping/planing/slotting 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	*
MEM09003	Prepare basic engineering drawing	8	*
MEM09011	Apply basic engineering design concepts	6	*

Unit code	Unit title	P	Pre req
MEM12019	Measure components using coordinate measuring machines	4	*
MEM12020	Set and operate coordinate measuring machines	2	*
MEM12021	Program coordinate measuring machines	4	*
MEM12022	Program coordinate measuring machines (advanced)	2	*
MEM13003	Work safely with industrial chemicals and materials	2	*
MEM13004	Work safely with molten metals/glass	2	*
MEM15001	Perform basic statistical quality control	2	*
MEM16005	Operate as a team member to conduct manufacturing, engineering or related activities	2	*

Qualification Mapping Information

Release 1. New qualification. Supersedes but is not equivalent to MEM30205 Certificate III in Engineering – Mechanical Trade.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>