Australian Government

MEM30522 Certificate III in Engineering - Technical

Release: 3

MEM30522 Certificate III in Engineering - Technical

Modification History

Release	Comments
3	Elective units updated.
2	Imported elective units updated. Supersedes and equivalent to MEM30522 Certificate III in Engineering - Technical (Release 1).
1	This qualification was first released in MEM Manufacturing and Engineering Release 3.0.

Qualification Description

This qualification defines the skills and knowledge required of an Engineering Technician within metal, engineering, manufacturing and associated industries.

The skills associated with this qualification are intended to apply to a wide range of engineering work including undertaking production planning, scheduling, work studies, estimating material requirements, inspection, quality control, laboratory procedures, supplier evaluation, non-destructive testing, metallurgy, drafting, assisting in design and development work of product and processes and other technical tasks.

This qualification is designed to provide an entry pathway to technician work in industry and is available through a Training Contract associated with an Australian Traineeship or through formal skills and knowledge recognition.

In some jurisdictions units in this qualification may relate to licensing or regulatory requirements. Licensing and regulatory information is included in the relevant units of competency. Local regulations should be checked.

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

The requirement for achievement of the MEM30522 Certificate III in Engineering - Technical is the achievement of competence in ten (10) units of competency made up of:

- all three (3) core units listed below
- a minimum of four (4) and a maximum of seven (7) elective units from Group A
- a maximum of two (2) elective units from Group B
- a maximum of one (1) elective unit from Group C.

A maximum of two (2) Group A elective units, that are relevant to work as Engineering Technician within metal, engineering, manufacturing and associated industries and do not duplicate skills and knowledge already available in units within this qualification, may be chosen from this Training Package, other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate III.

No other descriptor can be used.

Prerequisites

Prerequisite units count towards the total number of units. Units with prerequisite requirements are marked with an asterisk (refer to the individual units for details). All prerequisites are included in the qualification.

Core **units of competency**

Unit code	Unit title	Prereq
MEM16006	Organise and communicate information	*
MEM16008	Interact with computing technology	*
MEM30012	Apply mathematical techniques in a manufacturing engineering or related environment	

Elective **units of competency**

Group A

Unit code	Unit title	Prereq
MEM09201	Work effectively in an engineering drafting workplace	
MEM09202	Produce freehand sketches	
MEM09203	Measure and sketch site information	
MEM09204	Produce basic engineering detail drawings	*
MEM09205	Produce electrical schematic drawings	*

MEM09208	Detail fasteners and locking devices in mechanical drawings	*
MEM09209	Detail bearings, seals and other componentry in mechanical drawings	*
MEM09213	Produce schematic drawings for hydraulic and pneumatic fluid power systems	*
MEM09223	Interpret design specifications for structural steel detailing	*
MEM09224	Detail bolts and welds for structural steelwork connections	*
MEM09229	Read and interpret technical engineering drawings	
MEM11011	Undertake manual handling	*
MEM12023	Perform engineering measurements	*
MEM12024	Perform computations	*
MEM13003	Work safely with industrial chemicals and materials	*
MEM13004	Work safely with molten metals/glass	*
MEM13015	Work safely and effectively in manufacturing and engineering	
MEM13018	Work safely with ionizing radiation	
MEM13019	Undertake work health and safety activities in the workplace	
MEM15001	Perform basic statistical quality control	*
MEM16003	Provide advanced customer service	*
MEM18001	Use hand tools	*
MEM30005	Calculate force systems within simple beam structures	*
MEM30006	Calculate stresses in simple structures	*
MEM30007	Select common engineering materials	
MEM30008	Apply basic economic and ergonomic concepts to evaluate engineering applications	
MEM30009	Contribute to the design of basic mechanical systems	*
MEM30010	Set up basic hydraulic circuits	

MEM30011	Set up basic pneumatic circuits	
MEM30013	Assist in the preparation of a basic workplace layout	
MEM30014	Apply basic just in time systems to the reduction of waste	
MEM30015	Develop recommendations for basic set up time improvements	
MEM30016	Assist in the analysis of a supply chain	
MEM30017	Use basic preventative maintenance techniques and tools	
MEM30018	Undertake basic process planning	
MEM30019	Use resource planning software systems in manufacturing	*
MEM30020	Develop and manage a plan for a simple manufacturing related project	
MEM30021	Prepare a simple production schedule	
MEM30022	Undertake supervised procurement activities	
MEM30023	Prepare a simple cost estimate for a manufactured product	
MEM30024	Participate in quality assurance techniques	*
MEM30025	Analyse a simple electrical system circuit	*
MEM30026	Select and test components for simple electronic switching and timing circuits	*
MEM30027	Prepare basic programs for programmable logic controllers	
MEM30028	Assist in sales of technical products	
MEM30031	Operate computer-aided design (CAD) system to produce basic drawing elements	
MEM30032	Produce basic engineering drawings	
MEM30033	Use computer-aided design (CAD) to create and display 3D models	*
MEM48001	Test the mechanical properties of materials	
MEM48002	Monitor ferrous melting and casting processes	
MEM48003	Monitor nonferrous melting and casting processes	

MEM48004	Interpret basic binary phase diagrams	
MEM48005	Apply basic knowledge of casting operations	
MSMENV272	Participate in environmentally sustainable work practices	
MSS402003	Apply competitive systems and practices	
MSS402004	Sustain process improvements	
MSS402022	Apply quick changeover procedures	
MSS402032	Interpret cost and waste in terms of customer value	
MSS402054	Monitor process capability	
MSS402062	Use SCADA systems in operations	
MSS402084	Undertake root cause analysis	
MSS402086	Use planning software systems in operations	
MSS402087	Apply cost factors to work practices	
MSS403031	Analyse and improve manual handling processes	
MSS403081	Ensure process improvements are sustained	
MSS403082	Improve cost factors in work practices	
MSTGN4017	Participate in product engineering	
MSTGN4020	Contribute to the development of products or processes	
TLIG2007	Work in a socially diverse environment	

Group B

Unit code	Unit title	Prereq
MEM24040	Undertake basic penetrant tests	*
MEM24041	Undertake basic magnetic particle tests	*
MEM24042	Undertake basic eddy current tests	*

Group C

Unit code	Unit title	Prereq

MEM24043	Undertake ultrasonic thickness tests	*
MEM24044	Undertake basic radiographic tests	*

Pre-requisite Requirements

Unit of competency	Prerequisite requirement
MEM16006 Organise and communicate information	MEM13015 Work safely and effectively in manufacturing and engineering
MEM09208 Detail fasteners and locking devices in mechanical drawings	MEM09229 Read and interpret technical engineering drawings MEM09204 Produce basic engineering detail drawings
MEM30019 Use resource planning software systems in manufacturing	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering MEM16008 Interact with computing technology
MEM30025 Analyse a simple electrical system circuit	MEM16006 Organise and communicate information MEM12024 Perform computations MEM13015 Work safely and effectively in manufacturing and engineering
MEM24041 Undertake basic magnetic particle tests	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering
MEM09209 Detail bearings, seals and other componentry in mechanical drawings	MEM09229 Read and interpret technical engineering drawings MEM09204 Produce basic engineering detail drawings

MEM24043 Undertake ultrasonic thickness tests	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering
MEM15001 Perform basic statistical quality control	MEM16006 Organise and communicate information MEM12024 Perform computations MEM13015 Work safely and effectively in manufacturing and engineering
MEM24044 Undertake basic radiographic tests	MEM16006 Organise and communicate information MEM13018 Work safely with ionizing radiation MEM13015 Work safely and effectively in manufacturing and engineering
MEM09204 Produce basic engineering detail drawings	MEM09229 Read and interpret technical engineering drawings
MEM24040 Undertake basic penetrant tests	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering
MEM13003 Work safely with industrial chemicals and materials	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering MEM11011 Undertake manual handling
MEM18001 Use hand tools	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering MEM11011 Undertake manual handling

MEM09213 Produce schematic drawings for hydraulic and pneumatic fluid power systems	MEM09229 Read and interpret technical engineering drawings MEM09204 Produce basic engineering detail drawings
MEM16008 Interact with computing technology	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering
MEM30006 Calculate stresses in simple structures	MEM30012 Apply mathematical techniques in a manufacturing engineering or related environment
MEM09223 Interpret design specifications for structural steel detailing	MEM09229 Read and interpret technical engineering drawings
MEM30033 Use computer-aided design (CAD) to create and display 3D models	MEM30031 Operate computer-aided design (CAD) system to produce basic drawing elements
MEM30009 Contribute to the design of basic mechanical systems	MEM30032 Produce basic engineering drawings MEM16008 Interact with computing technology
MEM12024 Perform computations	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering
MEM13004 Work safely with molten metals/glass	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering MEM11011 Undertake manual handling
MEM30024 Participate in quality assurance techniques	MEM16006 Organise and communicate information MEM15001 Perform basic statistical quality control

	MEM12024 Perform computations MEM13015 Work safely and effectively in manufacturing and engineering
MEM12023 Perform engineering measurements	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering
MEM30005 Calculate force systems within simple beam structures	MEM30012 Apply mathematical techniques in a manufacturing engineering or related environment
MEM09205 Produce electrical schematic drawings	MEM09229 Read and interpret technical engineering drawings MEM09204 Produce basic engineering detail drawings
MEM24042 Undertake basic eddy current tests	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering
MEM30026 Select and test components for simple electronic switching and timing circuits	MEM16006 Organise and communicate information MEM12024 Perform computations MEM13015 Work safely and effectively in manufacturing and engineering
MEM11011 Undertake manual handling	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering
MEM09224 Detail bolts and welds for structural steelwork connections	MEM09229 Read and interpret technical engineering drawings MEM09223 Interpret design specifications for structural steel detailing

MEM16003 Provide advanced customer service	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering

Qualification Mapping Information

Current Code and Title	Previous Code and Title	Comments	Equivalence
MEM30522 Certificate III in Engineering - Technical	MEM30505 Certificate III in Engineering - Technical		Equivalent

Links

Companion volumes, including implementation guides, are found on the national training register - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=45a7f1d5-61a5-447a-9688-7abbd7e1a5c7.