



Australian Government

Department of Education, Employment and Workplace Relations

MSA30208 Certificate III in Manufacturing Technology

Revision Number: 3

MSA30208 Certificate III in Manufacturing Technology

Modification History

Imported unit codes updated.

Version 3 - MSACM units replaced by MSS units from MSS11v2 Sustainability Training Package.

Description

This qualification is suitable for delivery as part of a one-year Technology Cadetship, or can be undertaken through an Australian Apprenticeship arrangement.

This qualification has seven specialist streams available. These are:

- CAD/drafting
- Manufacturing operations
- Laboratory operations
- Technical officer
- Metallurgy
- Polymer technology
- Structural steel detailing.

Each stream offers an opportunity for significant choice in electives and each stream requires the same core units to be completed.

Note:

- The minimum requirements for the Certificate III in Manufacturing Technology can also be met by holders of the *Certificate III in Engineering - Technician* from the Metal and Engineering Training Package.
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Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

MSA30208 Certificate III in Manufacturing Technology

The following table contains a summary of the employability skills as identified by manufacturing technology related industries for this qualification. This table should be interpreted in conjunction with the detailed requirements of each unit of competency packaged in this qualification. The outcomes described here are broad industry requirements that reflect skill requirements for this level.

Employability skill	Industry/enterprise requirements for this qualification include:
Communication	<ul style="list-style-type: none"> • use communication technologies efficiently • communicate production abnormalities, documentation and test results • demonstrate effective and appropriate communication and interpersonal skills when dealing with people from a range of backgrounds • read, interpret and communicate work related documents • communicate with all team members
Teamwork	<ul style="list-style-type: none"> • work cooperatively with people of different ages, gender, race or religion • liaise with and provide support to other team members • work as part of a team • identify team performance required to meet customer needs • provide leadership to others in the team • encourage the sharing of information between team members • plan and support team activities
Problem solving	<ul style="list-style-type: none"> • identify and report problems and make contributions to their solution • investigate problem causes • implement changes • examine equipment for damage, missing components or other defects • identify and promptly address problems or issues • assess quality of work according to specifications • determine effective work practices • problem solve machine operational requirements
Initiative and enterprise	<ul style="list-style-type: none"> • seek and provide feedback on procedures • gather and analyse information • record information on the quality and other indicators of

Employability skill	Industry/enterprise requirements for this qualification include:
	production performance <ul style="list-style-type: none"> • identify and implement simple process improvements • coordinate work activities and manufacturing processes • use analytical and decision making skills
Planning and organising	<ul style="list-style-type: none"> • identify hazards and implement appropriate hazard control measures • organise self and others to meet production schedules • sequence work to maximise safety and productivity • select and use appropriate tools and equipment • apply time management skills to ensure work flow
Self management	<ul style="list-style-type: none"> • plan own work requirements from production requests • operate within appropriate time constraints and work standards • select and use appropriate equipment, materials, processes and procedures • plan to ensure effective production • apply workplace procedures • identify resource requirements, document and monitor • recognise limitations and seek timely advice
Learning	<ul style="list-style-type: none"> • ask questions to gain information • identify sources of information to expand knowledge and understanding • participate in improvement procedures • participate in development of continuous improvement strategies
Technology	<ul style="list-style-type: none"> • operate and adjust processes • start up and shut down equipment • set up equipment • monitor product/process quality • function and operating principles of equipment, machine components • maintain computer based workplace records

Packaging Rules

Packaging Rules

To be awarded a Certificate III in Manufacturing Technology, competency must be achieved in **eleven (11)** units of competency:

- **three (3)** core units of competency
- **eight (8)** elective units of competency chosen as described below.

Core units

The following **three (3)** units must be chosen.

Unit code	Unit title
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment
MSS402051A	Apply quality standards
MSAENV272B	Participate in environmentally sustainable work practices

Prerequisites

Note that elective units marked with an asterisk have one or more prerequisite requirements. The prerequisites for these units are to be counted in the total number of units required in the elective group. Please refer to the individual units for details.

Elective units

Group A - specialist streams

Choose **eight (8)** elective units as specified for a specialist stream.

Note:

- All units from each specialist stream are available in Group B as General Electives.
- A maximum of two general elective units may also be chosen from other qualifications in this Training Package, other endorsed Training Packages and accredited courses.

CAD/drafting specialist stream

Select **eight (8)** elective units:

- a minimum of **six (6)** from the list below
- the balance may be chosen from Group B General Electives

Unit code	Unit title	Prerequisites
AUM4003A	Interpret customer requirements	
LMTGN4002A	Participate in product engineering	

Unit code	Unit title	Prerequisites
MEM12024A	Perform computations	
MEM16006A	Organise and communicate information	
MEM16008A	Interact with computing technology	
MEM30001A	Use computer aided design systems to produce basic engineering drawings	*
MEM30002A	Produce basic engineering graphics	*
MEM30003A	Produce engineering drawings	*
MEM30004A	Use CAD to create and display 3D models	*
MEM30005A	Calculate force systems within simple beam structures	*
MEM30006A	Calculate stresses in simple structures	*
MEM30007A	Select common engineering materials	
MEM30008A	Apply basic economic and ergonomic concepts to evaluate engineering applications	
MEM30010A	Set up basic hydraulic circuits	
MEM30011A	Set up basic pneumatic circuits	
MEM30013A	Assist in the preparation of a basic workplace layout	
MEM30025A	Analyse a simple electrical system circuit	*

Manufacturing operations specialist stream

Select **eight (8)** elective units as follows:

- a minimum of **six (6)** from the list below
- the balance may be chosen from Group B General Electives

Unit code	Unit title	Prerequisites
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Unit code	Unit title	Prerequisites
FDFOP2005A	Work in a socially diverse environment	
MEM15001B	Perform basic statistical quality control	
MEM16006A	Organise and communicate information	
MEM16008A	Interact with computing technology	
MEM30014A	Apply basic just in time systems to the reduction of waste	
MEM30015A	Develop recommendations for basic set up time improvements	
MEM30016A	Assist in the analysis of a supply chain	
MEM30017A	Use basic preventative maintenance techniques and tools	
MEM30018A	Undertake basic process planning	
MEM30019A	Use resource planning software systems in manufacturing	*
MEM30020A	Develop and manage a plan for a simple manufacturing related project	
MEM30021A	Prepare a simple production schedule	
MEM30023A	Prepare a simple cost estimate for a manufactured product	
MEM30024A	Participate in quality assurance techniques	*
MSS402001A	Apply competitive systems and practices	
MSS402002A	Sustain process improvements	
MSS402020A	Apply quick changeover procedures	
MSS402030A	Apply cost factors to work practices	
MSS402031A	Interpret product costs in terms of customer requirements	
MSS402050A	Monitor process capability	

Unit code	Unit title	Prerequisites
MSS402060A	Use planning software systems in operations	
MSS402061A	Use SCADA systems in operations	
MSS402080A	Undertake root cause analysis	
MSS403002A	Ensure process improvements are sustained	
MSS403030A	Improve cost factors in work practices	

Laboratory operations specialist stream

Select **eight (8)** elective units:

- a minimum of **six (6)** from the list below
- the balance may be chosen from Group B General Electives

Unit code	Unit title	Prerequisites
LMTGN4016A	Contribute to the development of products or processes	
MEM15001B	Perform basic statistical quality control	
MEM16006A	Organise and communicate information	
MEM16008A	Interact with computing technology	
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment	
MEM30024A	Participate in quality assurance techniques	*
MSL913001A	Communicate with other people	
MSL913002A	Plan and conduct laboratory/field work	
MSL922001A	Record and present data	
MSL933001A	Maintain the laboratory/field workplace fit for purpose	
MSL933002A	Contribute to the achievement of quality objectives	

Unit code	Unit title	Prerequisites
MSL933003A	Apply critical control point requirements	
MSL934002A	Apply quality system and continuous improvement processes	
MSL943001A	Work safely with instruments that emit ionising radiation	
MSL943002A	Participate in laboratory/field workplace safety	
MSL952001A	Collect routine site samples	
MSL952002A	Handle and transport samples or equipment	
MSL953001A	Receive and prepare samples for testing	
MSL954001A	Obtain representative samples in accordance with sampling plan	
MSL963001A	Operate basic handblowing equipment	
MSL963002A	Repair glass apparatus using simple glassblowing equipment	
MSL973001A	Perform basic tests	
MSL973002A	Prepare working solutions	
MSL973003A	Prepare culture media	
MSL973004A	Perform aseptic techniques	
MSL973005A	Assist with fieldwork	
MSL973006A	Prepare trial batches for evaluation	
MSL973007A	Perform microscopic examination	

Technical officer specialist stream

Select **eight (8)** elective units:

- a minimum of **six (6)** from the list below
- the balance may be chosen from Group B General Electives

Unit code	Unit title	Prerequisites
LMTGN4016A	Contribute to the development of products or processes	
MEM15001B	Perform basic statistical quality control	
MEM16006A	Organise and communicate information	
MEM16008A	Interact with computing technology	
MEM30007A	Select common engineering materials	
MEM30008A	Apply basic economic and ergonomic concepts to engineering designs and applications	
MEM30009A	Contribute to the design of basic mechanical systems	*
MEM30010A	Set up basic hydraulic circuits	
MEM30011A	Set up basic pneumatic circuits	
MEM30013A	Assist in the design of basic workplace layout	
MEM30016A	Assist in the analysis of a supply chain	
MEM30017A	Use basic preventative maintenance techniques and tools	
MEM30018A	Undertake basic process planning	
MEM30019A	Use resource planning software systems in manufacturing	*
MEM30020A	Develop and manage a plan for a simple manufacturing related project	
MEM30022A	Undertake supervised procurement activities	
MEM30023A	Prepare a simple cost estimate for a manufactured product	
MEM30024A	Participate in quality assurance techniques	
MSS402031A	Interpret product costs in terms of customer requirements	
MSS402060A	Use planning software systems in operations	

Unit code	Unit title	Prerequisites
MSS402061A	Use SCADA systems	
MSS402080A	Undertake root cause analysis	
MSS403032A	Analyse manual handling processes	

Metallurgy specialist stream

Select **eight (8)** elective units:

- a minimum of **five (5)** from the two groups below
- the balance may be chosen from Group B General Electives
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Metallurgy group 1

Choose at least three (3) units from this list.

Unit code	Unit title	Prerequisites
MSATCM301A	Test the mechanical properties of materials	
MSATCM302A	Monitor basic ferrous melting and casting processes	
MSATCM303A	Monitor basic non-ferrous melting and casting processes	
MSATCM304A	Interpret basic binary phase diagrams	
MSATCM305A	Demonstrate basic knowledge of casting operations	

Metallurgy group 2

Choose at least two (2) units from this list.

Unit code	Unit title	Prerequisites
MEM09002B	Interpret technical drawing	
MEM13003B	Work safely with industrial chemicals	
MEM13004B	Work safely with molten metals/glass	

Unit code	Unit title	Prerequisites
MEM16008A	Interact with computing technology	
MEM30007A	Select common engineering materials	*

Polymer technology specialist stream

Select **eight (8)** elective units:

- a minimum of **six (6)** from the list below
- the balance may be chosen from Group B General Electives

Note that either PMBPREP301C or PMBPREP303C may be chosen, but not both.

Unit code	Unit title	Prerequisites
MSAPMSUP303A	Identify equipment faults	
PMAOPS350B	Match and adjust colour	
PMBPREP206C	Prepare materials to formulae	
PMBPREP301C	Set up and prepare for production	
PMBPREP303C	Set up equipment for continuous production	
PMBPREP304C	Set a die	
PMBPROD235C	Use materials and process knowledge to complete work operations	
PMBTECH301B	Use material and process knowledge to solve problems	*
PMBTECH302A	Modify existing compounds	
PMBTECH303A	Make minor modifications to products	
MSL973001A	Perform basic tests	
	Up to two (2) relevant units may be chosen from the production units available at Certificate III in the Plastics, Rubber & Cablemaking Training Package (PMB07), or its endorsed replacement.	

Structural steel detailing specialist stream

Select **eight (8)** elective units:

- a minimum of **six (6)** from the list below
- the balance may be chosen from Group B General Electives

Unit code	Unit title	Prerequisites
MSATCS301A	Interpret architectural and engineering design specifications for structural steel detailing	*
MSATCS302A	Detail bolts and welds for structural steelwork connections	*
MEM05051A	Select welding processes	
MEM09002B	Interpret technical drawing	
MEM16006A	Organise and communicate information	
MEM16008A	Interact with computing technology	
MEM30001A	Use computer aided drafting systems to produce basic engineering drawings	*
MEM30002A	Produce basic engineering graphics	*
MEM30003A	Produce detailed engineering drawings	*
MEM30004A	Use CAD to create and display 3D models	*

Group B - General electives

The balance of units for each specialist stream may be chosen from this list as specified below:

CAD/drafting:	Up to two units
Manufacturing operations:	Up to two units
Laboratory operations:	Up to two units
Technical officer:	Up to two units

CAD/drafting:	Up to two units
Metallurgy:	Up to three units
Polymer technology:	Up to two units
Structural steel detailing:	Up to two units

Unit code	Unit title	Prerequisites
AUM4003A	Interpret customer requirements	
FDFOP2005A	Work in a socially diverse environment	
LMTGN4002A	Participate in product engineering	
LMTGN4016A	Contribute to the development of products or processes	
MEM05051A	Select welding processes	
MEM09002B	Interpret technical drawing	
MEM12024A	Perform computations	
MEM13003B	Work safely with industrial chemicals	
MEM13004B	Work safely with molten metals/glass	
MEM15001B	Perform basic statistical quality control	
MEM16006A	Organise and communicate information	
MEM16008A	Interact with computing technology	
MEM30001A	Use computer aided design systems to produce basic engineering drawings	*
MEM30002A	Produce basic engineering graphics	*
MEM30003A	Produce engineering drawings	*
MEM30004A	Use CAD to create and display 3D models	*
MEM30005A	Calculate force systems within simple beam structures	*
MEM30006A	Calculate stresses in simple structures	*

Unit code	Unit title	Prerequisites
MEM30007A	Select common engineering materials	
MEM30008A	Apply basic economic and ergonomic concepts to engineering designs and applications	
MEM30009A	Contribute to the design of basic mechanical systems	*
MEM30010A	Set up basic hydraulic circuits	
MEM30011A	Set up basic pneumatic circuits	
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment	
MEM30013A	Assist in the design of basic workplace layout	
MEM30014A	Apply basic just in time systems to the reduction of waste	
MEM30015A	Develop recommendations for basic set up time improvements	
MEM30016A	Assist in the analysis of a supply chain	
MEM30017A	Use basic preventative maintenance techniques and tools	
MEM30018A	Undertake basic process planning	
MEM30019A	Use resource planning software systems in manufacturing	*
MEM30020A	Develop and manage a plan for a simple manufacturing related project	
MEM30021A	Prepare a simple production schedule	
MEM30022A	Undertake supervised procurement activities	
MEM30023A	Prepare a simple cost estimate for a manufactured product	
MEM30024A	Participate in quality assurance techniques	
MEM30025A	Analyse a simple electrical system circuit	*

Unit code	Unit title	Prerequisites
MSS402001A	Apply competitive systems and practices	
MSS402002A	Sustain process improvements	
MSS402020A	Apply quick changeover procedures	
MSS402030A	Apply cost factors to work practices	
MSS402031A	Interpret product costs in terms of customer requirements	
MSS402050A	Monitor process capability	
MSS402060A	Use planning software systems in operations	
MSS402061A	Use SCADA systems in operations	
MSS402080A	Undertake root cause analysis	
MSS403002A	Ensure process improvements are sustained	
MSS403030A	Improve cost factors in work practices	
MSS403032A	Analyse manual handling processes	
MSAPMSUP303A	Identify equipment faults	
MSATCM301A	Test the mechanical properties of materials	
MSATCM302A	Monitor basic ferrous melting and casting processes	
MSATCM303A	Monitor basic non-ferrous melting and casting processes	
MSATCM304A	Interpret basic binary phase diagrams	
MSATCM305A	Demonstrate basic knowledge of casting operations	
MSATCS301A	Interpret architectural and engineering design specifications for structural steel detailing	*
MSATCS302A	Detail bolts and welds for structural steelwork connections	*
MSL913001A	Communicate with other people	

Unit code	Unit title	Prerequisites
MSL913002A	Plan and conduct laboratory/field work	
MSL922001A	Record and present data	
MSL933001A	Maintain the laboratory/field workplace fit for purpose	
MSL933002A	Contribute to the achievement of quality objectives	
MSL933003A	Apply critical control point requirements	
MSL934002A	Apply quality system and continuous improvement processes	
MSL943001A	Work safely with instruments that emit ionising radiation	
MSL943002A	Participate in laboratory/field workplace safety	
MSL952001A	Collect routine site samples	
MSL952002A	Handle and transport samples or equipment	
MSL953001A	Receive and prepare samples for testing	
MSL954001A	Obtain representative samples in accordance with sampling plan	
MSL963001A	Operate basic handblowing equipment	
MSL963002A	Repair glass apparatus using simple glassblowing equipment	
MSL973001A	Perform basic tests	
MSL973002A	Prepare working solutions	
MSL973003A	Prepare culture media	
MSL973004A	Perform aseptic techniques	
MSL973005A	Assist with fieldwork	
MSL973006A	Prepare trial batches for evaluation	
MSL973007A	Perform microscopic examination	

Unit code	Unit title	Prerequisites
PMAOPS350B	Match and adjust colour	
PMBPREP206C	Prepare materials to formulae	
PMBPREP301C	Set up and prepare for production	
PMBPREP303C	Set up equipment for continuous production	
PMBPREP304C	Set a die	
PMBPROD235C	Use materials and process knowledge to complete work operations	
PMBTECH301B	Use material and process knowledge to solve problems	*
PMBTECH302A	Modify existing compounds	
PMBTECH303A	Make minor modifications to products	
	A maximum of two (2) general electives may be imported from other qualifications in this Training Package, other endorsed Training Packages and accredited courses where those units are available at Certificate III.	