

MEM10105 Certificate I in Engineering

Modification History

Correction of training.gov.au transfer error - MSAENV272B added to elective selection.
Updated one unit of competency - MEM05006B to MEM05006C

Description

The minimum requirements for achievement of the Certificate I in Engineering are:

- completion of all of the core units of competency listed below, and
- completion of elective units listed below to the value of at least 24 points.

Points associated with prerequisites count towards the total (refer to units and prerequisites listing in Appendix 2, Volume 1).

Appropriate elective units to the value of 5 points may be chosen from other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate I. Note that the elective units listed below include all of the units that are approved for selection from the MEM Training Package for use qualification. This meets the NQC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses.

Pathways Information

Not Applicable

Licensing/Regulatory Information

Not Applicable

Entry Requirements

Not Applicable

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	<ul style="list-style-type: none">• Read and interpret routine information on written job instructions and standard operating procedures. May include simple drawings• Follow verbal instructions• Enter routine and familiar information onto proforma and standard workplace forms• Orally report routine information• Use basic numeracy skills for undertaking comparison measurements
Teamwork	<ul style="list-style-type: none">• Work alone or as part of a team• Identify work roles, communicate and cooperate with others
Problem-solving	<ul style="list-style-type: none">• Check material/product for conformance to specification• Identify waste and correct procedures for disposal• Identify routine problems/faults in machine/process/equipment operations and act/report as required
Initiative and enterprise	<ul style="list-style-type: none">• Be capable of applying skills and knowledge to specified situations and contexts• Identify actual and foreseeable workplace hazards/problems during course of work• Minimise wasteful use of resources including materials and services in own work
Planning and organising	<ul style="list-style-type: none">• Select, prepare and lay out or assemble materials and equipment correctly• Conduct pre-start checks on machinery/equipment• Plan steps required to complete routine task• Identify sequence of activities/operations
Self-management	<ul style="list-style-type: none">• Adhere to all safety requirements• Perform work in accordance with job instructions and work procedures
Learning	<ul style="list-style-type: none">• Clarify tasks and required outcomes with appropriate personnel
Technology	<ul style="list-style-type: none">• Use dedicated tools, equipment and machines

Packaging Rules

Core units

- select all of the units from this list

Unit code	Unit title
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task
MEM15024A	Apply quality procedures
MEM16007A	Work with others in a manufacturing, engineering or related environment

Elective units

- select units from this list to the value of at least 24 points, including any prerequisites.

Unit code	Unit title	P
MEM03001B	Perform manual production assembly	4
MEM03002B	Perform precision assembly	4
MEM03003B	Perform sheet and plate assembly	4
MEM03004B	Perform electronic/electrical assembly (production)	8
MEM03006B	Set assembly stations	2
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04008B	Fettle and trim metal castings/forgings	4
MEM04018B	Perform general woodworking machine operations	4
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	4
MEM05003B	Perform soft soldering	2
MEM05004C	Perform routine oxy acetylene welding	2

Unit code	Unit title	P
MEM05005B	Carry out mechanical cutting	2
MEM05006C	Perform brazing and/or silver soldering	2
MEM05007C	Perform manual heating and thermal cutting	2
MEM05012C	Perform routine manual metal arc welding	2
MEM05013C	Perform manual production welding	2
MEM06001B	Perform hand forging	4
MEM06007B	Perform basic incidental heat/quenching, tempering and annealing	2
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07003B	Perform machine setting (routine)	4
MEM07024B	Operate and monitor machine/process	4
MEM07028B	Operate computer controlled machines/processes	2
MEM07029B	Perform routine sharpening/maintenance of production tools and cutters	4
MEM07030C	Perform metal spinning lathe operations (basic)	8
MEM07032B	Use workshop machines for basic operations	2
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2
MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08014B	Apply protective coatings (basic)	4

Unit code	Unit title	P
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM11005B	Pick and process order	4
MEM11006B	Perform production packaging	2
MEM11007B	Administer inventory procedures	4
MEM11008B	Package materials (stores and warehouse)	2
MEM11009B	Handle/move bulk fluids/gases	4
MEM11011B	Undertake manual handling	2
MEM11013B	Undertake warehouse receipt process	4
MEM11016B	Order materials	2
MEM12001B	Use comparison and basic measuring devices	2
MEM12002B	Perform electrical/electronic measurement	2
MEM12023A	Perform engineering measurements	5
MEM12024A	Perform computations	3
MEM13001B	Perform emergency first aid	1
MEM13002B	Undertake occupational health and safety activities in the workplace	3
MEM13003B	Work safely with industrial chemicals and materials	2
MEM13004B	Work safely with molten metals/glass	2
MEM14005A	Plan a complete activity	4
MEM15001B	Perform basic statistical quality control	2
MEM15002A	Apply quality systems	2
MEM15003B	Use improvement processes in team activities	4
MEM16004B	Perform internal/external customer service	2

Unit code	Unit title	P
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	2
MEM16006A	Organise and communicate information	2
MEM16008A	Interact with computing technology	2
MEM17003A	Assist in the provision of on the job training	2
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18013B	Perform gland packing	2
MEM18038B	Maintain wheels and tyres	2
MEM19001B	Perform jewellery metal casting	6
MEM19002B	Prepare jewellery illustrations	4
MEM19003B	Handle gem materials	2
MEM19006B	Replace watch batteries	1
MEM19009B	Perform investment procedures for lost wax casting process	1
MEM19010B	Produce rubber moulds for lost wax casting process	2
MEM19011B	Perform wax injection of moulds for lost wax casting process	2
MEM19014B	Perform hand engraving	4
MEM19015B	Perform jewellery enamelling	4
MEM19016B	Construct jewellery components	4
MEM19017B	Fabricate jewellery items	6
MEM20001A	Produce keys	4
MEM20002A	Assemble and test lock mechanisms	6

Unit code	Unit title	P
MEM20003A	Install and upgrade locks and hardware	4
MEM25001B	Apply fibre-reinforced materials	2
MEM25002B	Form and integrate fibre-reinforced structures	4
MEM25004B	Fair and shape surfaces	2
MEM25006B	Undertake marine sheathing operations	2
MEM25007B	Maintain marine vessel surfaces	4
MEM25014B	Perform marine slipping operations	2
MEM50002B	Work safely on marine craft	1
MEM50003B	Follow work procedures to maintain the marine environment	1
MEM50004B	Maintain quality of environment by following marina codes	1
MEM50009B	Safely operate a mechanically powered recreational boat	2
MSAENV272B	Participate in environmentally sustainable work practices	3

MEM10205 Certificate I in Boating Services

Modification History

The following units missing from the electives have been reinstated:
MEM50007B, 50008B, 50009B and 50010B, and MSAENV272B

Description

The minimum requirements for achievement of the Certificate I in Boating Services are:

- completion of the seven core units of competency listed below, and completion of three elective units from the list below to bring the total number of units to 10.

Two elective units may be chosen from other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate I. Note that the elective units listed below include all of the units that are approved for selection from the MEM Training Package for use in this qualification. This meets the NQC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the suitability of any units proposed for importation from other Training Packages or accredited courses.

Additional qualification descriptors

There are no approved additional descriptors for this qualification.

Pathways Information

Not Applicable

Licensing/Regulatory Information

Not Applicable

Entry Requirements

Not Applicable

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	<ul style="list-style-type: none">• Read, follow and communicate information on written job instructions, specifications, standard operating procedures, drawings and other applicable reference documents• Follow verbal instructions• Identify and follow safety signs/symbols• Recognise and use common boating terminology• Read and interpret information on boating identification and compliance plates, registration tags, engine and other component identification numbers• Use boating communication systems, methods and signals to convey messages
Teamwork	<ul style="list-style-type: none">• Work alone or as part of a team• Contribute to a group effort in order to plan and carry out work• Identify work roles, communicate and cooperate with others
Problem-solving	<ul style="list-style-type: none">• Identify actual and foreseeable workplace hazards during course of work• Inspect quality of own work• Identify waste and correct procedures for disposal• Assess operation and condition of components against specifications or manufacturer's requirements
Initiative and enterprise	<ul style="list-style-type: none">• Be capable of applying skills and knowledge to specified situations and contexts• Use appropriate responses in reaction to incidents and accidents.• Modify work plan to overcome unforeseen situations that occur as work progresses• Assist the business to maintain the quality of the environment• Minimise wasteful use of resources including materials and services in own work
Planning and organising	<ul style="list-style-type: none">• Identify sequence of activities and plan steps required to complete task• Collect and organise information relevant to work• Set up jobs prior to commencement of work including selection of appropriate materials and adjustment of equipment
Self-management	<ul style="list-style-type: none">• Carry out work safely and in accordance with company policy

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	<p>and procedures, manufacturer's recommendations and legislative requirements</p> <ul style="list-style-type: none">• Monitor performance of operation or quality of product or service to ensure customer satisfaction• Take responsibility for own quality
Learning	<ul style="list-style-type: none">• Check and clarify task related information with appropriate personnel• Review and modify work progress to complement the work of others
Technology	<ul style="list-style-type: none">• Select and use appropriate tools, materials, equipment and machines• Identify and describe the functions of the major systems of a recreational vessel and trailer• Identify and describe features and functions of attached navigation and communication devices• Use navigation and communication systems and equipment

Packaging Rules

Core units

- select all of the units from this list

Unit code	Unit title
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task
MEM15024A	Apply quality procedures
MEM16007A	Work with others in a manufacturing, engineering or related environment
MEM50001B	Classify recreational boating technologies and features
MEM50002B	Work safely on marine craft

Unit code	Unit title
MEM50003B	Follow work procedures to maintain the marine environment

Elective units

- select three units from this list.

Unit code	Unit title
MEM09002B	Interpret technical drawing
MEM11010B	Operate mobile load shifting equipment
MEM11011B	Undertake manual handling
MEM12023A	Perform engineering measurements
MEM13003B	Work safely with industrial chemicals and materials
MEM18001C	Use hand tools
MEM18002B	Use power tools/hand held operations
MEM50004B	Maintain quality of environment by following marina codes
MEM50005B	Refuel vessels
MEM50006B	Check operational capability of marine craft
MEM50007B	Check operational capability of sails and sail operating equipment
MEM50008B	Carry out trip preparation and planning
MEM50009B	Safely operate a mechanically powered recreational boat
MEM50010B	Respond to boating emergencies and incidents
MSAENV272B	Participate in environmentally sustainable work practices

MEM20105 Certificate II in Engineering

Modification History

Release 4 - equivalent. ISC advice on target groups and pathways included.

Description

This qualification covers the skills and knowledge required of workers employed as Engineering/manufacturing Employees -Level III as defined in the Manufacturing and Associated Industries and Occupations Award or in related industries where Engineering/ Manufacturing Employees work.

The qualification has been specifically developed to reflect the minimum training requirement specified in the Award for employment in the above occupation. 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 traineeship. The qualification may also be achieved through formal skills recognition assessment processes.

Application

This qualification is designed to provide an industry recognised skills profile related to production work as an Engineering/ Manufacturing Employee - Level III. Competency development would typically be undertaken through an Australian Apprenticeships arrangement where the integration of on and off-the-job training would be specified in the Training Plan associated with the Contract of Training between the employer and trainee.

Assessment of some units of competency must, where indicated, include evidence of the candidate's performance in a productive work environment where there is a sufficient range of appropriate tasks and/or materials to cover the scope of application of those units. All outcomes must reflect the standard of performance required of the work associated with the Unit/s.

This qualification is not suited and should not be used for people who are not employed in an engineering production or manufacturing environment. It is not suited and should not be used for school students unless they are formally engaged in a traineeship in accordance with the Australian Apprenticeships policy.

Pathways Information

Not Applicable

Licensing/Regulatory Information

Not Applicable

Entry Requirements

Not Applicable

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	<ul style="list-style-type: none">• Read and interpret routine information on written job instructions and standard operating procedures. May include simple drawings• Follow verbal instructions• Enter routine and familiar information onto proforma and standard workplace forms• Orally report routine information• Use basic numeracy skills for undertaking comparison measurements
Teamwork	<ul style="list-style-type: none">• Work alone or as part of a team• Identify work roles, communicate and cooperate with others
Problem-solving	<ul style="list-style-type: none">• Check material/product for conformance to specification• Identify waste and correct procedures for disposal• Identify routine problems/faults in machine/process/equipment operations and act/report as required
Initiative and enterprise	<ul style="list-style-type: none">• Be capable of applying skills and knowledge to specified situations and contexts• Identify actual and foreseeable workplace hazards/problems during course of work• Minimise wasteful use of resources including materials and services in own work
Planning and organising	<ul style="list-style-type: none">• Select, prepare and lay out or assemble materials and equipment correctly• Conduct pre-start checks on machinery/equipment• Plan steps required to complete routine task• Identify sequence of activities/operations
Self-management	<ul style="list-style-type: none">• Adhere to all safety requirements• Perform work in accordance with job instructions and work procedures
Learning	<ul style="list-style-type: none">• Clarify tasks and required outcomes with appropriate personnel
Technology	<ul style="list-style-type: none">• Use dedicated tools, equipment and machines

Packaging Rules

The minimum requirements for achievement of the Certificate II in Engineering are:

- completion of all of the core units of competency listed below, and
- completion of elective units from the list below to the value of at least 30 points.

Points associated with prerequisites count towards the total (refer to units and prerequisites listing in Appendix 2, Volume 1)

Appropriate elective units to the value of 6 points may be chosen from other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate II. Note that the elective units listed below include all of the units that are approved for selection from the MEM Training Package for use in this qualification. This meets the NQC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses.

Core units

- select all of the units from this list

Unit code	Unit title
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task
MEM15002A	Apply quality systems
MEM15024A	Apply quality procedures
MEM16007A	Work with others in a manufacturing, engineering or related environment

Elective units

- select elective units from this list to the value of at least 30 points, including any prerequisites.

Unit code	Unit title	P
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Unit code	Unit title	P
MEM03001B	Perform manual production assembly	4
MEM03002B	Perform precision assembly	4
MEM03003B	Perform sheet and plate assembly	4
MEM03004B	Perform electronic/electrical assembly (production)	8
MEM03005B	Rework and repair (electrical/electronic production)	8
MEM03006B	Set assembly stations	2
MEM04001B	Operate melting furnaces	4
MEM04002B	Perform gravity die casting	2
MEM04003B	Operate pressure die casting machine	4
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04006B	Operate sand moulding and core making machines	8
MEM04007B	Pour molten metal	4
MEM04008B	Fettle and trim metal castings/forgings	4
MEM04018B	Perform general woodworking machine operations	4
MEM04019B	Perform refractory installation and repair	4
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	4
MEM05002B	Perform high reliability soldering and desoldering	4
MEM05003B	Perform soft soldering	2
MEM05004C	Perform routine oxy acetylene welding	2

Unit code	Unit title	P
MEM05005B	Carry out mechanical cutting	2
MEM05006C	Perform brazing and/or silver soldering	2
MEM05007C	Perform manual heating and thermal cutting	2
MEM05012C	Perform routine manual metal arc welding	2
MEM05013C	Perform manual production welding	2
MEM05027A	Perform aluminothermic welding	2
MEM05041B	Weld using powder flame spraying	4
MEM05049B	Perform routine gas tungsten arc welding	2
MEM05050B	Perform routine gas metal arc welding	2
MEM06001B	Perform hand forging	4
MEM06002B	Perform hammer forging	4
MEM06003C	Carry out heat treatment	6
MEM06005B	Perform drop and upset forging	4
MEM06007B	Perform basic incidental heat/quenching, tempering and annealing	2
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07003B	Perform machine setting (routine)	4
MEM07015B	Set computer controlled machines/processes	2
MEM07024B	Operate and monitor machine/process	4
MEM07025B	Perform advanced machine/process operation	6
MEM07026B	Perform advanced plastic processing	6
MEM07027B	Perform advanced press operations	6

Unit code	Unit title	P
MEM07028B	Operate computer controlled machines/processes	2
MEM07029B	Perform routine sharpening/maintenance of production tools and cutters	4
MEM07030C	Perform metal spinning lathe operations (basic)	8
MEM07031C	Perform metal spinning lathe operations (complex)	4
MEM07032B	Use workshop machines for basic operations	2
MEM07033B	Operate and monitor basic boiler	6
MEM07034A	Operate and monitor intermediate class boiler	4
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4
MEM08003C	Perform electroplating operations	6
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08005B	Prepare and produce specialised coatings	4
MEM08006B	Produce clear and/or coloured and/or sealed anodised films on aluminium	2
MEM08007B	Control surface finish production and finished product quality	4
MEM08008B	Operate and control surface finishing waste treatment process	3
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6

Unit code	Unit title	P
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2
MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	4
MEM08014B	Apply protective coatings (basic)	4
MEM08015B	Apply protective coatings (advanced)	4
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM09002B	Interpret technical drawing	4
MEM10002B	Terminate and connect electrical wiring	3
MEM10013A	Install split air conditioning systems and associated pipework	6
MEM11001C	Erect/dismantle scaffolding and equipment	4
MEM11002C	Erect/dismantle complex scaffolding and equipment	4
MEM11004B	Undertake dogging	4
MEM11005B	Pick and process order	4
MEM11006B	Perform production packaging	2
MEM11007B	Administer inventory procedures	4
MEM11008B	Package materials (stores and warehouse)	2
MEM11009B	Handle/move bulk fluids/gases	4
MEM11010B	Operate mobile load shifting equipment	4
MEM11011B	Undertake manual handling	2

Unit code	Unit title	P
MEM11012B	Purchase materials	6
MEM11013B	Undertake warehouse receipt process	4
MEM11014B	Undertake warehouse dispatch process	4
MEM11016B	Order materials	2
MEM11017B	Organise and lead stocktakes	4
MEM11018B	Organise and maintain warehouse stock receipt and/or dispatch system	6
MEM11019B	Undertake tool store procedures	4
MEM11020B	Perform advanced warehouse computer operations	4
MEM11021B	Perform advanced operation of load shifting equipment	2
MEM11022B	Operate fixed/moveable load shifting equipment	4
MEM12001B	Use comparison and basic measuring devices	2
MEM12002B	Perform electrical/electronic measurement	2
MEM12019B	Measure components using coordinate measuring machine	4
MEM12023A	Perform engineering measurements	5
MEM12024A	Perform computations	3
MEM13001B	Perform emergency first aid	1
MEM13002B	Undertake occupational health and safety activities in the workplace	3
MEM13003B	Work safely with industrial chemicals and materials	2

Unit code	Unit title	P
MEM13004B	Work safely with molten metals/glass	2
MEM13007B	Maintain water treatment systems for cooling towers	2
MEM13013B	Work safely with ionizing radiation	4
MEM14005A	Plan a complete activity	4
MEM15001B	Perform basic statistical quality control	2
MEM15003B	Use improvement processes in team activities	4
MEM16002C	Conduct formal interviews and negotiations	4
MEM16004B	Perform internal/external customer service	2
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	2
MEM16006A	Organise and communicate information	2
MEM16008A	Interact with computing technology	2
MEM17001B	Assist in development and deliver training in the workplace	2
MEM17002B	Conduct workplace assessment	2
MEM17003A	Assist in the provision of on the job training	2
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18013B	Perform gland packing	2
MEM18024B	Maintain engine cooling systems	2
MEM18025B	Service combustion engines	2
MEM18026C	Test compression ignition fuel systems	4

Unit code	Unit title	P
MEM18027C	Overhaul engine fuel system components	8
MEM18028B	Maintain engine lubrication systems	2
MEM18029B	Tune diesel engines	4
MEM18038B	Maintain wheels and tyres	2
MEM18055B	Dismantle, replace and assemble engineering components	3
MEM18071B	Connect/disconnect fluid conveying system components	2
MEM18072B	Manufacture fluid conveying conductor assemblies	4
MEM18084A	Commission and decommission split air conditioning systems	4
MEM18085A	Install, service and repair domestic air conditioning and refrigeration appliances	6
MEM18086B	Test, recover, evacuate and charge refrigeration systems	4
MEM19001B	Perform jewellery metal casting	6
MEM19002B	Prepare jewellery illustrations	4
MEM19003B	Handle gem materials	2
MEM19004B	Handle and examine gemstone materials	6
MEM19006B	Replace watch batteries	1
MEM19007B	Perform gemstone setting	6
MEM19009B	Perform investment procedures for lost wax casting process	1
MEM19010B	Produce rubber moulds for lost wax casting process	2

Unit code	Unit title	P
MEM19011B	Perform wax injection of moulds for lost wax casting process	2
MEM19014B	Perform hand engraving	4
MEM19015B	Perform jewellery enamelling	4
MEM19016B	Construct jewellery components	4
MEM19017B	Fabricate jewellery items	6
MEM19020B	Fault-find and maintain micro-mechanisms	4
MEM19021B	Diagnose and service micro-mechanisms	6
MEM20001A	Produce keys	4
MEM20002A	Assemble and test lock mechanisms	6
MEM20003A	Install and upgrade locks and hardware	4
MEM20004A	Gain entry	4
MEM21001A	Replace watch batteries, capacitors and bands	2
MEM21002A	Perform watch movement exchange	2
MEM21003A	Perform watch case servicing, repair and refurbishment	4
MEM21004A	Clean watch and clock components	2
MEM21005A	Diagnose faults in quartz watches	2
MEM21006A	Service quartz watches	4
MEM21007A	Service complex quartz watches	4
MEM21008A	Service mechanical watches	4
MEM25001B	Apply fibre-reinforced materials	2
MEM25002B	Form and integrate fibre-reinforced structures	4

Unit code	Unit title	P
MEM25004B	Fair and shape surfaces	2
MEM25006B	Undertake marine sheathing operations	2
MEM25007B	Maintain marine vessel surfaces	4
MEM25011B	Install marine systems	8
MEM25012B	Install and test operations of marine auxiliary systems	6
MEM25014B	Perform marine slipping operations	2
MEM25015A	Assemble and install equipment and accessories/ancillaries	2
MEM26007A	Select and use reinforcing appropriate for product	4
MEM26008A	Select and use resin systems appropriate for product	4
MEM26009A	Select and use cores and fillers appropriate for product	2
MEM50002B	Work safely on marine craft	1
MEM50003B	Follow work procedures to maintain the marine environment	1
MEM50004B	Maintain quality of environment by following marina codes	1
MEM50009B	Safely operate a mechanically powered recreational boat	2
MSAENV272B	Participate in environmentally sustainable work practices	3
PMBPROD291B	Operate resin infusion moulding equipment	2
PMBPROD294B	Operate resin transfer moulding equipment	2

Unit code	Unit title	P
PMBPROD298B	Operate equipment using pre-pregs material	2

MEM20205 Certificate II in Engineering - Production Technology

Modification History

Release 6 - equivalent. ISC advice on target groups and pathways included.

Description

This qualification covers the skills and knowledge required of workers employed as Engineering/ Manufacturing Employees - Level IV as defined in the Manufacturing and Associated Industries and Occupations Award or in related industries where Engineering/ Manufacturing Employees work.

The qualification has been specifically developed to reflect the minimum training requirement specified in the Award for employment in the above occupation. 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 traineeship. The qualification may also be achieved through formal skills recognition assessment processes.

Application

This qualification is designed to provide an industry recognised skills profile related to production work as an Engineering/ Manufacturing Employee - Level IV. Competency development would typically be undertaken through an Australian Apprenticeships arrangement where the integration of on and off-the-job training would be specified in the Training Plan associated with the Contract of Training between the employer and trainee.

Assessment of some units of competency must, where indicated, include evidence of the candidate's performance in a productive work environment where there is a sufficient range of appropriate tasks and/or materials to cover the scope of application of those units. All outcomes must reflect the standard of performance required of the work associated with the Unit/s.

This qualification is not suited and should not be used for people who are not employed in an engineering production or manufacturing environment. It is not suited and should not be used for school students unless they are formally engaged in a traineeship in accordance with the Australian Apprenticeships policy.

Pathways Information

Not Applicable

Licensing/Regulatory Information

Not Applicable

Entry Requirements

Not Applicable

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	<ul style="list-style-type: none">• Refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials• Follow verbal instructions• Enter routine and familiar information onto proforma and standard workplace forms• Orally report routine information• Recognise and use common workplace terminology• Identify and follow safety signs and symbols
Teamwork	<ul style="list-style-type: none">• Work alone or as part of a team• Identify work roles, communicate and cooperate with others• Consult with team leaders and appropriate personnel
Problem-solving	<ul style="list-style-type: none">• Check material/product for conformance to specification• Identify problems/faults and act/report as required• Undertake numerical operations including comparison measurements, geometry and calculations/formulae
Initiative and enterprise	<ul style="list-style-type: none">• Be capable of applying the required skills and knowledge in a variety of situations and contexts• Identify actual and foreseeable workplace hazards/problems during course of work• Participate in quality systems and suggest improvements• Prevent and minimise environmental risks and maximise opportunities for environmental improvement
Planning and organising	<ul style="list-style-type: none">• Select, prepare and lay out or assemble materials and equipment correctly• Conduct pre-start checks on machinery/equipment• Plan steps required to complete task• Identify activities and work outcomes
Self-management	<ul style="list-style-type: none">• Adhere to all relevant safety, quality and environmental requirements and guidelines• Perform work in accordance with job instructions, specifications and work procedures• Take responsibility for own quality

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Learning	<ul style="list-style-type: none"> • Clarify tasks and required outcomes with appropriate personnel • Assist in the transfer of skills and knowledge to other employees
Technology	<ul style="list-style-type: none"> • Select and use appropriate tools, equipment and machines • Apply knowledge of process, equipment and materials

Packaging Rules

The minimum requirements for achievement of the Certificate II in Engineering - Production Technology are:

- completion of all of the core units of competency listed below, and
- completion of elective units from the list below to the value of at least 50 points.

Points associated with prerequisites count towards the total (refer to units for details). Appropriate elective units to the value of 11 points may be chosen from other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate II. Note that the elective units listed below include all of the units that are approved for selection from the MEM05 Training Package for use in this qualification. This meets the NSSC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses.

Additional qualification descriptors

The following additional descriptors are approved for use with this qualification: Marine Craft Manufacturing; Surface Finishing; Marine Craft Surface Finishing

Core units

- select all of the units from this list

Unit code	Unit title
MEM12023A	Perform engineering measurements
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task

Unit code	Unit title
MEM15002A	Apply quality systems
MEM15024A	Apply quality procedures
MEM16006A	Organise and communicate information
MEM16007A	Work with others in a manufacturing, engineering or related environment
MEM17003A	Assist in the provision of on the job training
MSAENV272B	Participate in environmentally sustainable work practices

Elective units

- select elective units from this list to the value of at least 50 points, including any prerequisites.

Unit code	Unit title	P
MEM03001B	Perform manual production assembly	4
MEM03002B	Perform precision assembly	4
MEM03003B	Perform sheet and plate assembly	4
MEM03004B	Perform electronic/electrical assembly (production)	8
MEM03005B	Rework and repair (electrical/electronic production)	8
MEM03006B	Set assembly stations	2
MEM04001B	Operate melting furnaces	4
MEM04002B	Perform gravity die casting	2
MEM04003B	Operate pressure die casting machine	4
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04006B	Operate sand moulding and core making machines	8

Unit code	Unit title	P
MEM04007B	Pour molten metal	4
MEM04008B	Fettle and trim metal castings/forgings	4
MEM04018B	Perform general woodworking machine operations	4
MEM04019B	Perform refractory installation and repair	4
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	4
MEM05002B	Perform high reliability soldering and desoldering	4
MEM05003B	Perform soft soldering	2
MEM05004C	Perform routine oxy acetylene welding	2
MEM05005B	Carry out mechanical cutting	2
MEM05006C	Perform brazing and/or silver soldering	2
MEM05007C	Perform manual heating and thermal cutting	2
MEM05009C	Perform automated thermal cutting	2
MEM05012C	Perform routine manual metal arc welding	2
MEM05013C	Perform manual production welding	2
MEM05014C	Monitor quality of production welding/fabrications	2
MEM05015D	Weld using manual metal arc welding process	4
MEM05017D	Weld using gas metal arc welding process	4
MEM05019D	Weld using gas tungsten arc welding process	4
MEM05023C	Weld using submerged arc welding process	4
MEM05027A	Perform aluminothermic welding	2
MEM05041B	Weld using powder flame spraying	4

Unit code	Unit title	P
MEM05049B	Perform routine gas tungsten arc welding	2
MEM05050B	Perform routine gas metal arc welding	2
MEM05051A	Select welding processes	2
MEM05052A	Apply safe welding practices	4
MEM05053A	Set and edit computer controlled thermal cutting machines	4
MEM06001B	Perform hand forging	4
MEM06002B	Perform hammer forging	4
MEM06003C	Carry out heat treatment	6
MEM06004B	Select heat treatment processes and test finished product	6
MEM06005B	Perform drop and upset forging	4
MEM06006C	Repair springs	4
MEM06007B	Perform basic incidental heat/quenching, tempering and annealing	2
MEM06008A	Hammer forge complex shapes	4
MEM06009A	Hand forge complex shapes	4
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07003B	Perform machine setting (routine)	4
MEM07004B	Perform machine setting (complex)	8
MEM07005C	Perform general machining	8
MEM07014B	Perform electro-discharge (EDM) machining operations	4
MEM07015B	Set computer controlled machines/processes	2
MEM07016C	Set and edit computer controlled machines/processes	4

Unit code	Unit title	P
MEM07024B	Operate and monitor machine/process	4
MEM07025B	Perform advanced machine/process operation	6
MEM07026B	Perform advanced plastic processing	6
MEM07027B	Perform advanced press operations	6
MEM07028B	Operate computer controlled machines/processes	2
MEM07029B	Perform routine sharpening/maintenance of production tools and cutters	4
MEM07030C	Perform metal spinning lathe operations (basic)	8
MEM07031C	Perform metal spinning lathe operations (complex)	4
MEM07032B	Use workshop machines for basic operations	2
MEM07033B	Operate and monitor basic boiler	6
MEM07034A	Operate and monitor intermediate class boiler	4
MEM07040A	Set multistage integrated processes	6
MEM07041A	Perform production machining*	8
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4
MEM08003C	Perform electroplating operations	6
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08005B	Prepare and produce specialised coatings	4
MEM08006B	Produce clear and/or coloured and/or sealed anodised films on aluminium	2
MEM08007B	Control surface finish production and finished product quality	4
MEM08008B	Operate and control surface finishing waste treatment process	3

Unit code	Unit title	P
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2
MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	4
MEM08014B	Apply protective coatings (basic)	4
MEM08015B	Apply protective coatings (advanced)	4
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM08018B	Electroplate engineering coatings	6
MEM08019B	Electroplate protective finishes	6
MEM08020B	Electroplate decorative finishes	6
MEM09002B	Interpret technical drawing	4
MEM10002B	Terminate and connect electrical wiring	3
MEM10009B	Install refrigeration and air conditioning plant and equipment	4
MEM10010B	Install pipework and pipework assemblies	4
MEM10011B	Terminate and connect specialist cables	3
MEM10013A	Install split air conditioning systems and associated pipework	6
MEM11001C	Erect/dismantle scaffolding and equipment	4
MEM11002C	Erect/dismantle complex scaffolding and equipment	4
MEM11003B	Coordinate erection/dismantling of complex scaffolding/equipment	4
MEM11004B	Undertake dogging	4

Unit code	Unit title	P
MEM11005B	Pick and process order	4
MEM11006B	Perform production packaging	2
MEM11007B	Administer inventory procedures	4
MEM11008B	Package materials (stores and warehouse)	2
MEM11009B	Handle/move bulk fluids/gases	4
MEM11010B	Operate mobile load shifting equipment	4
MEM11011B	Undertake manual handling	2
MEM11012B	Purchase materials	6
MEM11013B	Undertake warehouse receipt process	4
MEM11014B	Undertake warehouse dispatch process	4
MEM11015B	Manage warehouse inventory system	6
MEM11016B	Order materials	2
MEM11017B	Organise and lead stocktakes	4
MEM11018B	Organise and maintain warehouse stock receipt and/or dispatch system	6
MEM11019B	Undertake tool store procedures	4
MEM11020B	Perform advanced warehouse computer operations	4
MEM11021B	Perform advanced operation of load shifting equipment	2
MEM11022B	Operate fixed/movable load shifting equipment	4
MEM11023A	Operate a bridge and gantry crane	4
MEM11024A	Undertake basic rigging*	4
MEM11025A	Operate a non-slewing mobile crane of greater than three tonnes capacity	4

Unit code	Unit title	P
MEM12001B	Use comparison and basic measuring devices	2
MEM12002B	Perform electrical/electronic measurement	2
MEM12019B	Measure components using coordinate measuring machine	4
MEM12020B	Set and operate coordinate measuring machine	2
MEM12024A	Perform computations	3
MEM13001B	Perform emergency first aid	1
MEM13002B	Undertake occupational health and safety activities in the workplace	3
MEM13003B	Work safely with industrial chemicals and materials	2
MEM13004B	Work safely with molten metals/glass	2
MEM13007B	Maintain water treatment systems for cooling towers	2
MEM13013B	Work safely with ionizing radiation	4
MEM14005A	Plan a complete activity	4
MEM15001B	Perform basic statistical quality control	2
MEM15003B	Use improvement processes in team activities	4
MEM15004B	Perform inspection	2
MEM16002C	Conduct formal interviews and negotiations	4
MEM16004B	Perform internal/external customer service	2
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	2
MEM16008A	Interact with computing technology	2
MEM16013A	Operate in a self-directed team	2
MEM17001B	Assist in development and deliver training in the workplace	2

Unit code	Unit title	P
MEM17002B	Conduct workplace assessment	2
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18003C	Use tools for precision work	4
MEM18013B	Perform gland packing	2
MEM18024B	Maintain engine cooling systems	2
MEM18025B	Service combustion engines	2
MEM18026C	Test compression ignition fuel systems	4
MEM18027C	Overhaul engine fuel system components	8
MEM18028B	Maintain engine lubrication systems	2
MEM18029B	Tune diesel engines	4
MEM18030B	Diagnose and rectify low voltage electrical systems	8
MEM18031B	Diagnose and rectify low voltage starting systems	2
MEM18032B	Maintain induction/exhaust systems	4
MEM18033B	Perform engine bottom-end overhaul	4
MEM18035B	Diagnose and rectify braking systems	6
MEM18037B	Diagnose and rectify low voltage charging systems	2
MEM18038B	Maintain wheels and tyres	2
MEM18039B	Diagnose and rectify track type undercarriage	4
MEM18040B	Maintain suspension systems	4
MEM18041B	Maintain steering systems	4
MEM18042C	Diagnose and rectify manual transmissions	4

Unit code	Unit title	P
MEM18043C	Diagnose and rectify automatic transmissions	8
MEM18044C	Diagnose and rectify drive line and final drives	4
MEM18055B	Dismantle, replace and assemble engineering components	3
MEM18063B	Terminate signal and data cables	4
MEM18071B	Connect/disconnect fluid conveying system components	2
MEM18072B	Manufacture fluid conveying conductor assemblies	4
MEM18084A	Commission and decommission split air conditioning systems	4
MEM18085A	Install, service and repair domestic air conditioning and refrigeration appliances	6
MEM18086B	Test, recover, evacuate and charge refrigeration systems	4
MEM18098A	Prepare to perform work associated with fuel system installation and servicing*	2
MEM19001B	Perform jewellery metal casting	6
MEM19002B	Prepare jewellery illustrations	4
MEM19003B	Handle gem materials	2
MEM19004B	Handle and examine gemstone materials	6
MEM19005B	Produce three-dimensional precision items	8
MEM19006B	Replace watch batteries	1
MEM19007B	Perform gemstone setting	6
MEM19008B	Prepare jewellery designs	6
MEM19009B	Perform investment procedures for lost wax casting process	1
MEM19010B	Produce rubber moulds for lost wax casting process	2
MEM19011B	Perform wax injection of moulds for lost wax casting process	2

Unit code	Unit title	P
MEM19012B	Produce jewellery wax model	4
MEM19013B	Produce jewellery metal masters	4
MEM19014B	Perform hand engraving	4
MEM19015B	Perform jewellery enamelling	4
MEM19016B	Construct jewellery components	4
MEM19017B	Fabricate jewellery items	6
MEM19018B	Repair jewellery items	6
MEM19020B	Fault-find and maintain micro-mechanisms	4
MEM19021B	Diagnose and service micro-mechanisms	6
MEM20001A	Produce keys	4
MEM20002A	Assemble and test lock mechanisms	6
MEM20003A	Install and upgrade locks and hardware	4
MEM20004A	Gain entry	4
MEM20006A	Maintain and service mechanical locking devices	6
MEM20014A	Perform a site security survey	2
MEM21001A	Replace watch batteries, capacitors and bands	2
MEM21002A	Perform watch movement exchange	2
MEM21003A	Perform watch case servicing, repair and refurbishment	4
MEM21004A	Clean watch and clock components	2
MEM21005A	Diagnose faults in quartz watches	2
MEM21006A	Service quartz watches	4
MEM21007A	Service complex quartz watches	4

Unit code	Unit title	P
MEM21008A	Service mechanical watches	4
MEM24001B	Perform basic penetrant testing	2
MEM24003B	Perform basic magnetic particle testing	2
MEM25001B	Apply fibre-reinforced materials	2
MEM25002B	Form and integrate fibre-reinforced structures	4
MEM25004B	Fair and shape surfaces	2
MEM25006B	Undertake marine sheathing operations	2
MEM25007B	Maintain marine vessel surfaces	4
MEM25011B	Install marine systems	8
MEM25012B	Install and test operations of marine auxiliary systems	6
MEM25014B	Perform marine slipping operations	2
MEM25015A	Assemble and install equipment and accessories/ancillaries	2
MEM26001A	Lay up composites using open moulding techniques	6
MEM26002A	Lay up composites using vacuum closed moulding techniques	6
MEM26003A	Lay up composites using pressure closed moulding techniques	6
MEM26004A	Make basic plugs for composites fabrication	3
MEM26005A	Make basic moulds for composites fabrication	3
MEM26006A	Mark and cut out sheets for composite use	4
MEM26007A	Select and use reinforcing appropriate for product	4
MEM26008A	Select and use resin systems appropriate for product	4
MEM26009A	Select and use cores and fillers appropriate for product	2
MEM26010A	Store and handle composite materials	2

Unit code	Unit title	P
MEM26011A	Determine materials and techniques for a composite component or product*	6
MEM26012A	Record and trial work processes for one-off composite products	4
MEM26013A	Select and use composite processes or systems appropriate for product	4
MEM26014A	Adjust resin chemicals for current conditions	4
MEM26015A	Select and apply repair techniques	6
MEM26016A	Select and use joining techniques	6
MEM26017A	Prepare composite or other substrate surfaces	4
MEM26018A	Organise composite trials	4
MEM26019A	Finish a composite product	4
MEM26020A	Identify and interpret required standards for composites	2
MEM50002B	Work safely on marine craft	1
MEM50003B	Follow work procedures to maintain the marine environment	1
MEM50004B	Maintain quality of environment by following marina codes	1
MEM50009B	Safely operate a mechanically powered recreational boat	2
CPCCLDG3001 A	Licence to perform dogging	0
CPCCLRG3001 A	Licence to perform rigging basic level	0
CPCCLSF2001A	Licence to erect, alter and dismantle scaffolding basic level	0
CPCCLSF3001A	Licence to erect, alter and dismantle scaffolding intermediate level	0
PMBPROD291B	Operate resin infusion moulding equipment	2

Unit code	Unit title	P
PMBPROD294B	Operate resin transfer moulding equipment	2
PMBPROD298B	Operate equipment using pre-pregs material	2
PMBPROD391B	Produce composites using resin infusion	4
PMBPROD394B	Produce composites using resin transfer moulding	4
PMBPROD398B	Produce composites using pre-preqs	4
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	1
TLILIC2001A	Licence to operate a forklift truck	0
TLILIC2002A	Licence to operate an order picking forklift truck	0
TLILIC3003A	Licence to operate a bridge and gantry crane	0
TLILIC3006A	Licence to operate a non-slewing mobile crane (greater than three tonnes capacity)	0

MEM20305 Certificate II in Boating Services

Modification History

Release 3 - Title corrected for unit MEM05003B Perform soft soldering

Description

Pathways Information

Not Applicable

Licensing/Regulatory Information

Not Applicable

Entry Requirements

Not Applicable

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	<ul style="list-style-type: none">• Read, follow and communicate information on written job instructions, specifications, standard operating procedures, drawings and other applicable reference documents• Follow verbal instructions• Identify and follow safety signs/symbols• Recognise and use common boating terminology• Read and interpret information on boating identification and compliance plates, registration tags, engine and other component identification numbers• Use boating communication systems, methods and signals to convey messages
Teamwork	<ul style="list-style-type: none">• Work alone or as part of a team• Contribute to a group effort in order to plan and carry out work• Identify work roles, communicate and cooperate with others
Problem-solving	<ul style="list-style-type: none">• Identify actual and foreseeable workplace hazards during course of work• Inspect quality of own work• Identify waste and correct procedures for disposal• Assess operation and condition of components against specifications or manufacturer's requirements
Initiative and enterprise	<ul style="list-style-type: none">• Be capable of applying skills and knowledge to specified situations and contexts• Use appropriate responses in reaction to incidents and accidents.• Modify work plan to overcome unforeseen situations that occur as work progresses• Assist the business to maintain the quality of the environment• Minimise wasteful use of resources including materials and services in own work
Planning and organising	<ul style="list-style-type: none">• Identify sequence of activities and plan steps required to complete task• Collect and organise information relevant to work• Set up jobs prior to commencement of work including selection of appropriate materials and adjustment of equipment
Self-management	<ul style="list-style-type: none">• Carry out work safely and in accordance with company policy

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
	<p>and procedures, manufacturer's recommendations and legislative requirements</p> <ul style="list-style-type: none"> • Monitor performance of operation or quality of product or service to ensure customer satisfaction • Take responsibility for own quality
Learning	<ul style="list-style-type: none"> • Check and clarify task related information with appropriate personnel • Review and modify work progress to complement the work of others
Technology	<ul style="list-style-type: none"> • Select and use appropriate tools, materials, equipment and machines • Identify and describe the functions of the major systems of a recreational vessel and trailer • Identify and describe features and functions of attached navigation and communication devices • Use navigation and communication systems and equipment

Packaging Rules

The minimum requirements for achievement of the Certificate II in Boating Services are:

- completion of the eight (8) core units of competency listed below, and
- completion of six (6) elective units from the list below to bring the total number of units to fourteen (14).

Note that when selecting elective units any prerequisite units must also be completed and count towards the required number of elective units (refer to units for details).

Two appropriate elective units may be chosen from other endorsed Training Packages and accredited courses where those units are available at Certificate II. Note that the elective units listed below include all of the units that are approved for selection from the MEM05 Training Package for use in this qualification. This meets the NSSC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Additional qualification descriptors

There are no approved additional descriptors for this qualification.

Core units

- select all of the units from this list

Unit code	Unit title
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task
MEM15024A	Apply quality procedures
MEM16006A	Organise and communicate information
MEM16007A	Work with others in a manufacturing, engineering or related environment
MEM50001B	Classify recreational boating technologies and features
MEM50002B	Work safely on marine craft
MEM50003B	Follow work procedures to maintain the marine environment

Elective units

- select six units from this list.

Unit code	Unit title
MEM04018B	Perform general woodworking machine operations
MEM05003B	Perform soft soldering
MEM05005B	Carry out mechanical cutting
MEM05007C	Manual heating and thermal cutting
MEM05012C	Perform routine manual metal arc welding
MEM05050B	Perform routine gas metal arc welding
MEM09002B	Interpret technical drawing
MEM11010B	Operate mobile load shifting equipment
MEM11011B	Undertake manual handling

Unit code	Unit title
MEM12023A	Perform engineering measurements
MEM13003B	Work safely with industrial chemicals and materials
MEM18001C	Use hand tools
MEM18002B	Use power tools/hand held operations
MEM25001B	Apply fibre-reinforced materials
MEM25004B	Fair and shape surfaces
MEM25007B	Maintain marine vessel surfaces
MEM50004B	Maintain quality of environment by following marina codes
MEM50005B	Refuel vessels
MEM50006B	Check operational capability of marine craft
MEM50007B	Check operational capability of sails and sail operating equipment
MEM50008B	Carry out trip preparation and planning
MEM50009B	Safely operate a mechanically powered recreational boat
MEM50010B	Respond to boating emergencies and incidents
MSAENV272B	Participate in environmentally sustainable work practices
TLILIC2001A	Licence to operate a forklift truck
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)

MEM20413 Certificate II in Engineering Pathways

Modification History

New qualification - Release 1

Description

This qualification applies to a learning and assessment environment where access to structured on-the-job learning in a workplace may not be available. This qualification is only for delivery in learning institutions.

The qualification is intended for people interested in exposure to an engineering or related working environment with a view to entering into employment in that area. This qualification will equip graduates with knowledge and skills which will enhance their prospects of employment in an engineering or related working environment.

Application

The learning program should develop trade-like skills but not attempt to develop trade-level skills. As an example, the outcome level of welding skills from this qualification is not about learning trade-level welding theory and practice; it is about being introduced to welding, how it can be used to join metal and having the opportunity to weld some metal together. Similarly with machining, the outcome should be something produced on a lathe etc., not the theory and practice of machining. The focus should be on using engineering tools and equipment to produce or modify objects. This needs to be done in a safe manner for each learner and those around them.

Delivery

Registered Training Organisations (RTOs) offering this qualification will need to have access to basic engineering equipment and facilities, as well as sufficient open plan workshop facilities where long-term projects, perhaps spanning the duration of the learning, can be completed. The teachers/trainers must be experienced with the knowledge and trade skills to successfully facilitate and motivate skills development in the learners. Trainers and assessors must meet the NVR/AQTF trainer and assessor requirements for training and assessment, vocational competency and professional development.

The learning program should be centred around the major project.

MSAPCI101A Adapt to work in industry is a unit of competency that provides the opportunity for work placement.

Pathways Information

Pathways into the qualification

This qualification will be typically accessed by direct entry.

Pathways from the qualification

This qualification delivers broad-based underpinning skills and knowledge in a range of engineering and manufacturing tasks which will enhance the graduates' entry-level employment prospects for apprenticeships, traineeships or general employment in an engineering-related workplace.

Achievement of competence in units *MEM13014A Apply principles of occupational health and safety in a work environment*, *MSAPMSUP106A Work in a team*, *MEM16006A Organise and communicate information*, *MEM16008A Interact with computing technology*, *MSAENV272B Participate in environmentally sustainable work practices*, *MEM18001C Use hand tools* and *MEM18002B Use power tools/hand held operations* will provide credit towards a range of manufacturing and engineering trade and production qualifications.

Achievement of competence in all of the other units will provide advanced progress towards reaching competence in units contained in other metal and engineering qualifications.

Licensing/Regulatory Information

There are no specific licences that relate to this qualification.

Entry Requirements

There are no entry requirements for this qualification.

Employability Skills Summary

Employability Skill	Industry/enterprise requirements for this qualification include:
Communication	<ul style="list-style-type: none"> • Read and interpret routine information on written job instructions and standard operating procedures including simple drawings • Follow verbal instructions • Orally report routine information • Use basic numeracy skills for undertaking measurements
Teamwork	<ul style="list-style-type: none"> • Work alone or as part of a team • Identify work roles, communicate and cooperate with others
Problem-solving	<ul style="list-style-type: none"> • Check material/product for conformance to specification • Identify waste and correct procedures for disposal • Identify routine problems/faults in machine/process/equipment operations and act/report as required
Initiative and enterprise	<ul style="list-style-type: none"> • Be capable of applying skills and knowledge to specified situations and contexts • Identify actual and foreseeable workplace hazards/problems during course of work • Minimise wasteful use of resources including materials and services in own work
Planning and organising	<ul style="list-style-type: none"> • Select, prepare and lay out or assemble materials and equipment correctly • Conduct pre-start checks on machinery/equipment • Plan steps required to complete routine task • Identify sequence of activities/operations
Self-management	<ul style="list-style-type: none"> • Adhere to all safety requirements • Perform work in accordance with job instructions and work procedures
Learning	<ul style="list-style-type: none"> • Clarify tasks and required outcomes with appropriate personnel
Technology	<ul style="list-style-type: none"> • Use dedicated tools, equipment and machines

Packaging Rules

The minimum requirements for achievement of the Certificate II in Engineering Pathways are completion of a minimum of twelve (12) units of competency as described below:

- all of the core units of competency listed below
- a **minimum of seven (7)** Group A electives
- a **maximum of one (1)** Group B elective.

Core units

- select all of the units from this list

Unit code	Unit title
MEM13014A	Apply principles of occupational health and safety in the work environment
MEMPE005A	Develop a career plan for the engineering and manufacturing industry
MEMPE006A	Undertake a basic engineering project
MSAENV272B	Participate in environmentally sustainable work practices

Group A electives

Unit code	Unit title
MEM16006A	Organise and communicate information
MEM16008A	Interact with computing technology
MEM18001C	Use hand tools
MEM18002B	Use power tools/hand held operations
MEMPE001A	Use engineering workshop machines
MEMPE002A	Use electric welding machines
MEMPE003A	Use oxy-acetylene and soldering equipment
MEMPE004A	Use fabrication equipment

Unit code	Unit title
MEMPE007A	Pull apart and re-assemble engineering mechanisms

Group B Electives

Unit code	Unit title
MSAPCI101A	Adapt to work in industry
MSAPMSUP106A	Work in a team

Custom Content Section

Not applicable.

