

MSL20109 Certificate II in Sampling and Measurement

Modification History

Release 2 - ISC upgrade

- Minor formatting changes
- Prerequisite unit now marked with an asterisk

Description

This qualification covers the skills and knowledge required to perform a range of sampling and measurement as part of laboratory, production or field operations in the construction, manufacturing, resources and environmental industry sectors.

Job roles/employment outcomes

The Certificate II in Sampling and Measurement offers entry level training for sampling and measurement skills applied across a range of industries. Employment outcomes targeted by this qualification include samplers and testers, production personnel, plant operators, production operators, field assistants, drivers, sample couriers, and many others.

Samplers and testers conduct limited sampling and testing as part of their duties in their particular industry. In some industry sectors (for example, mineral assay) this work forms a whole job role. They apply a restricted range of skills and operational knowledge to perform these tasks and do not generally work inside a laboratory. They:

- follow set procedures to sample raw materials and products
- may package, label, store and transport samples
- use simple equipment (hydrometers, thermometers and pH meters) to make measurements and perform basic tests that take a short time and involve a narrow range of variables and easily recognised control limits
- may make visual inspection of products and packaging.

Examples of the work of sampler/testers are given below.

- A milk tanker driver conducts aseptic sampling of milk before loading and then conveys the samples to the laboratory.
- An operator in a quarry may take samples from stockpiles and conveyors and conduct simple tests on different grades of aggregates.
- A field officer working in environmental monitoring may visit a catchment area to collect water samples
- Sampler/testers take air samples for testing for microbial monitoring of air conditioning or cooling towers.

Application

This qualification is typically used to prepare new employees or develop the skills of existing workers within the construction, manufacturing, resources and environmental industry sectors.

Training programs for this qualification are suitable to be undertaken as part of a formal training contract with an employer under an Australian Traineeship or Apprenticeship arrangement.

Pathways Information

Pathways into the qualification

This qualification may be accessed by direct entry. Credit for this qualification may include units contained within relevant skill sets.

Pathways from the qualification

Further training pathways from this qualification include the MSL30109 Certificate III in Laboratory Skills or MSA30208 Certificate III in Manufacturing Technology (Laboratory Operations Stream).

Licensing/Regulatory Information

There are no specific licences that relate to this qualification. However, depending on the jurisdiction, licensing or regulatory requirements may apply to the use of some units in this qualification. Local regulations should be checked for details.

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">• Receive and pass on written and oral messages, provide relevant information in response to requests and demonstrate effective interpersonal skills including conflict resolution techniques• Record and store data, perform basic calculations of scientific quantities and present information in tables and graphs• Report using verbal responses, data entry into laboratory information management system (LIMS) or enterprise databases and brief written reports using enterprise proformas• Communicate with team members, supervisors and customers effectively and courteously• Interpret work instructions• Complete workplace documentation such as reports
Teamwork	<ul style="list-style-type: none">• Liaise with relevant personnel to arrange site access and permits• Seek advice and clarify instructions with supervisors
Problem solving	<ul style="list-style-type: none">• Deal with inquiries in accordance with enterprise customer service requirements• Rectify obvious errors and atypical data using enterprise procedures• Identify site hazards and review enterprise safety procedures• Report problems accidents or incidents
Initiative and enterprise	<ul style="list-style-type: none">• Identify and report opportunities for improvements in procedures, processes and equipment• Identify hazards associated with samples, preparation methods, reagents and equipment and implement enterprise control measures
Planning and organising	<ul style="list-style-type: none">• Plan and organise daily work activities to ensure the timely completion of tasks• Modify work plans to suit changing conditions and priorities• Assemble and organise specified sampling equipment and materials and maintain own work area
Self-management	<ul style="list-style-type: none">• Follow work instructions to perform scientific/technical tasks safely and efficiently

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
	<ul style="list-style-type: none"> • Follow enterprise procedures which reflect occupational health and safety (OHS), equal opportunity, anti-discrimination and non-harassment legislative requirements • Maintain confidentiality of all client/enterprise data and information • Use appropriate protective equipment to ensure personal safety when sampling, processing, transferring or disposing of samples
Learning	<ul style="list-style-type: none"> • Clarify instructions with supervisors to ensure a complete understanding of the task • Identify training opportunities and career options • Seek advice if the required samples cannot be collected or if procedures require modification
Technology	<ul style="list-style-type: none"> • Use communication, emergency, data recording, sampling measuring and laboratory equipment • Use computers and software to collect and report information

Packaging Rules

Packaging Rules

To be awarded a Certificate II in Sampling and Measurement competency must be achieved in a total of eight (8) units of competency, consisting of:

- **four (4)** core units of competency
- **four (4)** elective units of competency.

Units listed under **core** are considered essential for all people who perform sampling and measurement. The units listed as **electives** may only apply to some personnel according to the size and scope of the organisation.

Note: Units marked with an asterisk have one or more prerequisite requirements and must be included in the total number of units chosen. Please refer to individual units for details.

Core units of competency

Select all **four (4)** units of competency from this group.

Unit code	Unit title	Prerequisites
MSAENV272B	Participate in environmentally sustainable work practices	
MSL912001A	Work within a laboratory/field workplace (induction)	
MSL922001A	Record and present data	
MSL943002A	Participate in laboratory/field workplace safety	

Elective units of competency

Select **four (4)** elective units from Groups A and B as specified below:

- a minimum of **two (2)** units must be chosen from Group A
- the remainder may be chosen from Groups A and B to bring the total number of electives to **four (4)**.

Note that **two (2)** of the elective units may be chosen from this Training Package, other endorsed Training Packages and accredited courses, where those units are available at Certificate II.

Group A

Unit code	Unit title	Prerequisites
MSL952001A	Collect routine site samples	
MSL952002A	Handle and transport samples or equipment	
MSL972001A	Conduct routine site measurements	

Group B

Unit code	Unit title	Prerequisites
MSL913001A	Communicate with other people	

Unit code	Unit title	Prerequisites
MSL913002A	Plan and conduct laboratory/field work	
MSL933001A	Maintain the laboratory/field workplace fit for purpose	
MSL933002A	Contribute to the achievement of quality objectives	
MSL933003A	Apply critical control point requirements	
MSL933004A	Perform calibration checks on equipment and assist with its maintenance	
MSL943001A	Work safely with instruments that emit ionising radiation	
MSL953001A	Receive and prepare samples for testing	
MSL953002A	Operate a robotic sample preparation system	
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	
MSL973008A	Perform histological procedures	
MSL973009A	Conduct field-based acceptance tests for construction materials	

Unit code	Unit title	Prerequisites
MSL973010A	Conduct laboratory-based acceptance tests for construction materials	
MSL973011A	Perform fire pouring techniques	
MSL973012A	Assist with geotechnical site investigations	

NWP10110 Certificate I in Water Sustainability

Modification History

NWP10110 Release 2: Layout adjusted. No changes to content.
NWP10110 Release 1: Primary release.

Description

The Certificate I in Environmental Sustainability provides pathways into the water industry for, in particular, young people who are seeking an opportunity to gain experience of the industry while developing a set of valuable employability skills.

To achieve this qualification the candidate must demonstrate competency in seven units of competency, comprising:

- four core units
- two industry project units
- two pathways units specifically incorporating employability skills
- three elective units.
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Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

Qualification code: NWP10110

Qualification title: Certificate I in Water Sustainability

The following table contains a summary of the employability skills as identified by the water industry for this qualification. The employability skills facets described here are broad industry requirements that may vary depending on qualification packaging options.

Employability Skill	Industry/enterprise requirements for this qualification include the following facets:
Communication	<ul style="list-style-type: none"> • communicates effectively and appropriately with others • reads and interprets workplace information accurately • uses literacy skills in regard to written and verbal communication in the workplace • uses basic interpersonal and communication skills (including listening and questioning, receiving feedback) • records and relays relevant information • understands relevant definitions, terminology, symbols and language • interprets maps and simple plans • explains water systems • follows instructions • maintains and checks records and documents • reports and documents water-related research and projects • uses correct water industry terminology when communicating and reporting
Teamwork	<ul style="list-style-type: none"> • works collaboratively and effectively with team members • applies work procedures accurately and in a timely manner • relates positively to fellow team members • applies procedures for maintaining a tidy and clean personal work area • works cooperatively and collaboratively with others to complete tasks
Problem solving	<ul style="list-style-type: none"> • researches, assesses and explains a limited range of principles and functions of water systems • responds effectively to hazards, risks and emergencies • performs mathematical and scientific calculations • applies water testing processes • uses appropriate techniques to solve or report problems identified when completing work tasks

Employability Skill	Industry/enterprise requirements for this qualification include the following facets:
	<ul style="list-style-type: none"> • applies scientific principles to the design, construction and operation of a working model of a water system
Initiative and enterprise	<ul style="list-style-type: none"> • identifies risks and hazards • takes opportunities to work with team members and supervisors to improve processes • takes appropriate initiative to deal with problems and complete tasks
Planning and organising	<ul style="list-style-type: none"> • plans personal work • researches, explores, assesses and explains a limited range of principles and functions of water systems • investigates local water and wastewater systems • researches, assesses and reports on water systems and water quality, distribution and treatment • plans water sampling and testing • plans and designs a basic water system
Self management	<ul style="list-style-type: none"> • adapts and modifies activities depending on differing workplace contexts and environments • plans skills development • identifies and responds to risks to personal wellbeing which may affect safe performance in the workplace • recognises limitations in skills and experience, asks for help and seeks clarification or information about work requirements and procedures
Learning	<ul style="list-style-type: none"> • undertakes research on a limited range of water systems and management • seeks and applies feedback on personal performance • plans skills development • checks and confirms policies, procedures and legislative requirements • checks systems and equipment used in the workplace and the instructions, processes and precautions for their use
Technology	<ul style="list-style-type: none"> • uses technical equipment for measuring, sampling, testing and making adjustments • uses computer equipment for recording data, researching on the internet, and using graphic simulations, plans and diagrams

Employability Skill	Industry/enterprise requirements for this qualification include the following facets:
	<ul style="list-style-type: none"> • uses work-related plant, equipment and tools • identifies and correctly uses equipment, tools and other technology required to complete project tasks, including scientific equipment, computers, and safety and field equipment • applies procedures for identifying and using suitable work-related technology when carrying out project calculations

The diverse nature of the candidates undertaking this qualification may include students undertaking VET in Schools programs or people involved in other forms of pre-employment or early employment programs. Therefore, the facets of the above employability skills are representative of the water industry in general and may not reflect specific job roles. Learning and assessment strategies for this qualification should be based on the requirements as identified in units of competency that meet packaging guidelines. This table is a summary of employability skills that are typical of this qualification and should not be interpreted as definitive.

Packaging Rules

7 units of competency are required for this qualification including:

- 4 core units
- 3 elective units

Choose a minimum of 2 elective from the list below.

Choose the remaining 1 elective unit from either the list below, **or** elsewhere in this Training Package, **or** another endorsed Training Package **or** Accredited Course.

All elective units selected from outside this qualification must be selected from qualifications aligned to AQF level 1 or 2.

Elective units selected must not duplicate content already covered by other units in this qualification.

Core	
NWP101B	Investigate sustainable water cycle management
NWP102B	Design a basic water system model
NWP103B	Demonstrate care and safe practices
NWP104B	Sample and test water sources and quality
Electives	
NWP105B	Draw and use simple maps, plans and drawings

BSBLED101A	Plan skills development
BSBWOR204A	Use business technology
BSBITU201A	Produce simple word processed documents
BSBITU202A	Create and use spreadsheets

NWP20107 Certificate II in Water Operations

Modification History

NWP20107 Release 2: Layout adjusted. No changes to content.
NWP20107 Release 1: Primary release.

Description

To achieve this qualification the candidate must demonstrate competency in 11 units of competency, comprising three core and eight elective units.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

Qualification code: NWP20107

Qualification title: Certificate II in Water Operations

The following table contains a summary of the employability skills as identified by the water industry for this qualification. The employability skills facets described here are broad industry requirements that may vary depending on qualification packaging options.

Employability Skill	Industry/enterprise requirements for this qualification include the following facets:
Communication	<ul style="list-style-type: none"> • communicates effectively with internal and external customers • records and relays relevant information • understands and uses relevant definitions, terminology, symbols and language • interprets plans, drawings and specifications • participates in the implementation and monitoring of OHS policies and procedures • follows reporting procedures for monitoring conformity with statutory requirements • records and reports work activities • produces basic reports and logs • operates communications equipment • gives and receives instructions • follows plans, charts and instructions • understands a range of technical documents, including: <ul style="list-style-type: none"> • specifications • plans • organisational policies • service requirements specified in customer contracts • discusses organisational issues • reports and records hazards and risks • maintains and checks records and documents
Teamwork	<ul style="list-style-type: none"> • works collaboratively and effectively with team members and contractors • describes the organisation's management structure and role relationships • gives and receives instructions • works effectively as part of a team • monitors work processes and ensures safe work practices • applies work procedures accurately and in a timely manner

Employability Skill	Industry/enterprise requirements for this qualification include the following facets:
	<ul style="list-style-type: none"> • checks coordination issues, including permission to access third-party sites, isolations and permits to work with relevant personnel • relates positively to fellow workers and the management team
Problem solving	<ul style="list-style-type: none"> • responds effectively to hazards, risks and emergencies • conducts relevant tests and monitoring procedures • assesses environmental risks at the local work site • applies control procedures to environmental risks and incidents • inspects water facilities (e.g. dams, distribution systems and treatment facilities) to identify actual or potential problems • analyses problems and applies appropriate remedial solutions • performs relevant calculations • collects and tests samples • restores sites after work • rectifies equipment faults
Initiative and enterprise	<ul style="list-style-type: none"> • identifies risks and hazards • contributes to improvements in environmental procedures • identifies typical faults and problems and takes necessary remedial action • identifies opportunities for improved water management • accesses, interprets and applies relevant legislative responsibilities
Planning and organising	<ul style="list-style-type: none"> • plans and organises personal work activities • plans activities, incorporating appropriate control measures to overcome identified risks and meet required environmental outcomes for specific project or site • confirms testing details and plans testing work according to organisational and statutory requirements • conducts and assesses relevant water tests • contributes to effective management of water operation's assets • identifies and responds to problems experienced in assignments and projects

Employability Skill	Industry/enterprise requirements for this qualification include the following facets:
Self management	<ul style="list-style-type: none"> • plans performance to ensure required levels of service standards and work quality • interprets work requirements • monitors and adjusts work according to requirements for job quality, customer service, public responsibility and resource use • checks, edits, saves, prints and files work according to organisational requirements • reviews and applies standard reporting procedures and identifies impact on work • follows work instructions • finalises work and completes documentation • uses feedback to improve own performance
Learning	<ul style="list-style-type: none"> • seeks and applies feedback on personal performance • uses information effectively to improve work performance • learns from colleagues as part of effective teamwork • responds to suggestions for improvement to personal work performance • seeks advice and assistance from designated organisational personnel in operating computer systems • monitors and adjusts according to requirements for job quality, customer service, public responsibility and resource use
Technology	<ul style="list-style-type: none"> • knows procedures for the use of instruments and other field-testing equipment • prepares and checks testing equipment according to organisational and statutory requirements • applies relevant technologies used to gather, record and monitor, map and plan data • installs and maintains basic metering equipment, and flow control and regulating devices for irrigation systems • selects and uses suitable equipment according to the specific tasks and projects • reads meters • uses test equipment • uses workplace computer equipment • maintains and understands plant, equipment and tools' capabilities and limitations • uses technology to improve efficiency and effectiveness of

Employability Skill	Industry/enterprise requirements for this qualification include the following facets:
	managing work

The high proportion of electives required by this qualification means that the facets of the above employability skills are representative of the water industry in general and may not reflect specific job roles. Learning and assessment strategies for this qualification should be based on the requirements identified in units of competency that meet packaging guidelines. This table is a summary of employability skills that are typical of this qualification and should not be interpreted as definitive.

Packaging Rules

11 units of competency are required for this qualification including:

- 3 core units
- 8 elective units

Choose a minimum of 5 elective units from the list below.

Choose the remaining 3 units from either the list below, **or** elsewhere in this Training Package, **or** another endorsed Training Package **or** Accredited Course.

All elective units selected from outside this qualification must be selected from qualifications aligned to AQF level 2 or 3.

Elective units selected must not duplicate content already covered by other units in this qualification.

Specialisations are possible within this qualification. Details and examples of specialisation rules are included in the [Industry Specialisation](#) (see "[Qualifications Framework](#)" on page **Error! Bookmark not defined.**) section of this Training Package.

Core	
NWP201B	Follow defined OHS procedures and regulatory requirements
NWP202B	Apply environmental and licensing procedures
NWP203B	Plan and organise personal work activities
Electives	
NWP207A	Work effectively in the water industry
NWP208A	Perform basic wastewater tests
NWP209B	Use maps, plans, drawings and specifications
NWP210B	Perform basic water quality tests
NWP211B	Use computerised systems

NWP213B	Monitor and operate irrigation and domestic delivery systems
NWP215B	Install and replace basic volumetric metering equipment
NWP216B	Install basic metering equipment and flow control devices for irrigation systems
NWP218B	Perform and record sampling
NWP219A	Work safely in confined spaces
NWP220B	Collect and control drainage run-off
NWP221A	Operate basic flow control and regulating devices in water or wastewater treatment network systems
NWP222A	Operate basic flow control and regulating devices in irrigation systems
NWP223A	Install basic metering equipment, flow control and regulating devices
NWP226B	Prepare and restore work site
NWP227B	Control vegetation on a site
NWP229B	Repair minor structures
NWP230B	Maintain and repair irrigation channels and drains
NWP231B	Maintain and repair drainage assets
NWP232B	Operate water reticulation and distribution system
NWP233B	Construct and install water distribution assets
NWP234B	Locate, identify and protect utility services
NWP239B	Identify and apply water entitlements and delivery processes
NWP240B	Inspect and report catchment and surrounding areas
NWP241B	Inspect and maintain basic dams and water storages
NWP242B	Monitor and report water extraction
NWP243B	Operate bore fields and groundwater source systems
NWP244B	Maintain and repair bulkwater assets

NWP245B	Maintain tanks and water storage assets
NWP246B	Inspect and maintain public facilities
NWP247A	Maintain catchment and surrounding areas
NWP250B	Construct and install wastewater pipelines
NWP251B	Construct open earthen channels or drains
NWP252B	Construct and install irrigation delivery and stormwater drainage assets
NWP253B	Install and repair water services
NWP254B	Repair or insert water distribution assets
NWP255B	Maintain and repair wastewater collection assets
NWP256B	Monitor and report water distribution systems
NWP257B	Maintain and repair wastewater collection systems
NWP258B	Monitor and operate bulkwater transfer systems
NWP259B	Operate, monitor and maintain pump stations
NWP260A	Monitor and report water treatment processes
NWP261A	Operate and maintain water treatment plant and equipment
NWP262A	Monitor and report wastewater treatment processes
NWP263A	Operate and maintain wastewater treatment plant and equipment
NWP264B	Monitor, operate and report wastewater pre-treatment processes
NWP268B	Monitor, operate and report chlorine disinfection systems
NWP270B	Monitor, operate and report basic anaerobic processes
NWP271B	Monitor, operate and report sedimentation processes
NWP272B	Monitor, operate and report wastewater lagoon processes
NWP273A	Monitor, operate and report ultraviolet irradiation disinfection systems
NWP274A	Monitor, operate and report ozone treatment systems

NWP275A	Monitor, operate and report chlorine dioxide systems
NWP276A	Monitor, operate and report fluoridation systems
NWP277A	Work safely with liquefied chlorine gas
NWP278A	Perform blue green algae sampling
NWP279	Demonstrate knowledge of the risk management principles of the Australian drinking water guidelines
BSBSUS201A	Participate in environmentally sustainable work practices
RIICCM205A	Carry out manual excavation
RIICCM210A	Install trench support

PMA20113 Certificate II in Process Plant Operations

Modification History

Release 3 - inclusion of 1 new elective in Group A and and 2 new electives in Group B.

Description

The PMA20113 Certificate II in Process Plant Operations has been developed as a technical qualification for use in the PMA08 Chemical, Hydrocarbons and Refining Training Package.

Job roles/employment outcomes

The PMA20113 Certificate II in Process Plant Operations is intended for competent operators who operate production equipment or undertake similar roles directly producing products. The operator would apply a breadth and depth of knowledge to a defined range of situations and would be expected to apply this knowledge to solve a defined range of problems by applying known solutions to a limited range of predictable problems.

Other non-technical Certificates II are available for production support employees at this level, such as MSA20107 Certificate II in Process Manufacturing. This certificate should be used where the job requirements do not allow for the development of competency in sufficient technical units of competency. The MSA21108 Certificate II in Competitive Manufacturing is also available for employees at this level where the job requires sophisticated manufacturing practice skills rather than technical skills.

Application

This qualification is typically used to prepare new employees or develop existing workers performing an operational role in the chemical, hydrocarbons or refining sectors.

Operators may specialise in one of the following sectors:

- fine chemicals
- heavy chemicals
- petrochemicals
- polymer manufacture
- hydrocarbon extraction
- hydrocarbon transmission
- hydrocarbon processing/refining
- minerals processing/refining
- metalliferous processing/refining
- metals smelting/processing
- other related areas.

Specialisations must be reflected by the selection of units identified for specialised streams.

Training programs for this qualification are suitable to be undertaken as part of a formal training contract with an employer under an Australian Traineeship or Apprenticeship arrangement.

Pathways Information

Pathways into the qualification

This qualification may be accessed by direct entry. Credit may be granted towards this qualification by those who have completed MSA10207 Certificate I in Process Manufacturing in the MSA07 Manufacturing Training Package or other relevant qualifications. Credit for this qualification may also include units contained within relevant Skill Sets.

Pathways from the qualification

Further training pathways from this qualification include PMA30113 Certificate III in Process Plant Operations, MSA30107 Certificate III in Process Manufacturing, MSA31108 Certificate III in Competitive Manufacturing, MSA30208 Certificate III in Manufacturing Technology or other relevant qualifications.

Additional qualification advice

An industry specialisation should include a range of units (typically production or other units relevant to the specialisation) that focus more on the industry speciality than a generic qualification.

An industry specialisation does not change the title of the qualification although RTOs may choose to record the specialisation.

MSA20107 Certificate II in Process Manufacturing from the MSA07 Manufacturing Training Package is available for production support employees at this level and should be used where the job requirements do not allow for the development of competency in sufficient technical units of competency.

MSA21108 Certificate II in Competitive Manufacturing is available for employees at this level who already possess technical skills and who require additional manufacturing practice skills above those available in this qualification.

Licensing/Regulatory Information

There are no specific licences that relate to this qualification. However, in some jurisdictions some units in this qualification may have licensing or regulatory requirements. Local regulations should be checked for details.

Entry Requirements

Not applicable.

Employability Skills Summary

Employability Skill	Industry/enterprise requirements for this qualification include:
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Communication

- complete logs and reports
- use technical information and manufacturer's information
- collect, analyse and organise information
- communicate ideas and information
- effective use of workplace documentation
- maintain workplace records

Teamwork

- identify and describe own role and role of other
- work within a team
- resolve conflicts between team members
- teamwork strategies

Problem-solving

- recognise a problem or a potential problem related to a plant item
- determine problems needing priority action
- refer problems outside area of responsibility to appropriate person, with possible causes
- seek information and assistance as required to solve problems
- solve problems within area of responsibility related to plant items
- follow through items initiated until final resolution has occurred
- identify and isolate faults in equipment
- use a range of formal problem solving techniques

Initiative and enterprise

- identify the most appropriate equipment/plant item
- make adjustments to improve equipment/item performance
- anticipate the impact of the process on the product
- determine problems needing action
- recommend required action
- report problems outside area of responsibility
- distinguish between causes of faults

Planning and organising

- plan own work requirements
- plan scope of equipment/plant item checks
- plan and organise activities
- identify tasks to achieve team goals
- organise allocation of tasks
- monitor completion of allocated tasks
- organise work according to a production schedule

Self-management

- 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

- 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

- operation and adjustment of processes
- start up and shut down equipment/plant items
- set up equipment/plant items
- monitor product/process quality
- function and operating principles of equipment, machine components
- maintain workplace records

Packaging Rules

To be awarded the PMA20113 Certificate II in Process Plant Operations competency must be achieved in sixteen (16) units of competency:

- five (5) core units of competency
- eleven (11) elective units of competency chosen as specified below

Note

Where prerequisite units apply, these must be considered in the total number of units chosen.

Core units of competency

Unit code	Unit title
MSAENV272B	Participate in environmentally sustainable work practices
MSAPMOHS110A	Follow emergency response procedures
MSAPMOHS200A	Work safely
MSAPMSUP100A	Apply workplace procedures
MSAPMSUP102A	Communicate in the workplace

Elective units of competency

Select **eleven (11)** units as specified below:

- A minimum of **four (4)** from Group A
- The remainder may be chosen from Groups A, B and C (with a maximum of **five (5)** from Group C) to bring the total number of electives to **eleven (11)**.

Note that **three (3)** of the Group C units can be chosen from other qualifications in this Training Package, other endorsed Training Packages and accredited courses, where those units are available at Certificate II.

Group A - Specialist electives

Unit code	Unit title	Prerequisites
PMAOPS201B	Operate fluid flow equipment	
PMAOPS202B	Operate fluid mixing equipment	
PMAOPS203B	Handle goods	
PMAOPS204B	Use utilities and services	
PMAOPS205B	Operate heat exchangers	
PMAOPS208B	Operate chemical separation equipment	
PMAOPS210B	Operate particulates handling equipment	
PMAOPS211B	Operate manufacturing extruders	
PMAOPS213B	Package product/material	
PMAOPS216B	Operate local control system	
PMAOPS217B	Operate wet milling equipment	
PMAOPS220B	Monitor chemical reactions in the process	
PMAOPS221B	Operate and monitor prime movers	
PMAOPS222B	Operate and monitor pumping systems and equipment	*
PMAOPS223B	Operate and monitor valve systems	
PMAOPS224B	Provide fluids for utilities and support	
PMAOPS226A	Monitor and operate flare systems	
PMAOPS230B	Monitor, operate and maintain pipeline stations and equipment	
PMAOPS231B	Control gas odourisation	
PMAOPS232B	Produce product by filtration	
PMAOPS233A	Monitor wells and gathering systems	
PMAOPS234A	Monitor and operate low pressure	

	compressors	
PMAOPS240B	Store liquids in bulk	
PMAOPS241A	Operate Joule-Thomson effect device	
PMAOPS242A	Moor ships for transfer of bulk processed particulates or fluids	
PMAOPS246A	Operate separation equipment	
PMAOPS247A	Operate powered separation equipment	
PMAOPS260A	Conduct screening operations	
PMAOPS261A	Operate bulk solids loading equipment	
PMAOPS262A	Operate digestion equipment	
PMAOPS263A	Operate leaching equipment	
PMAOPS264A	Operate solvent extraction equipment	
PMAOPS265A	Operate magnetic/electrical separation equipment	
PMAOPS280B	Interpret process plant schematics	
PMAOPS290B	Operate a biotreater	
PMASMELT260B	Form carbon anodes	
PMASMELT261B	Bake carbon anodes	
PMASMELT262B	Clean and strip anode rods	
PMASMELT263B	Spray carbon anodes	
PMASMELT264B	Start up reduction cells	
PMASMELT265B	Operate reduction cells	
PMASMELT266B	Deliver molten metal	
PMASMELT267B	Cast aluminium ingots	
PMASMELT268B	Vertical direct casting	

PMASMELT269A	Operate cell tending equipment	
PMASMELT270A	Supply product from reduction cells	
FDFPH2001A	Apply Good Manufacturing Practice procedures	
MEM04001B	Operate melting furnaces	
MSAPMOPS200A	Operate equipment	
MSAPMOPS212A	Use enterprise computers or data systems	
PMC552002C	Operate equipment to blend/mix materials	
PMC552003C	Operate grinding equipment	
PMC552008B	Operate crushing equipment	
PMC562070B	Move materials	
UEPOPS319B	Operate and monitor gas production plant	

One (1) unit may be chosen from Group A in PMA30113 Certificate III in Process Plant Operations

Group B

Unit code	Unit title	Prerequisites
MEM05012C	Perform routine manual metal arc welding	
MEM09002B	Interpret technical drawing	
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	
MSS402002A	Sustain process improvements	
MSS402030A	Apply cost factors to work practices	
MSS402031A	Interpret product costs in terms of customer requirements	
MSS402040A	Apply 5S procedures	
MSS402050A	Monitor process capability	
MSS402051A	Apply quality standards	
MSS402060A	Use planning software systems in operations	
MSS402080A	Undertake root cause analysis	
MSS402081A	Contribute to the application of a proactive maintenance strategy	
MSAPMOHS205A	Control minor incidents	
MSAPMOHS210B	Undertake first response to non-fire incidents	
MSAPMOHS212A	Undertake first response to fire incidents	
MSAPMOHS216A	Operate breathing apparatus	
MSAPMOHS217A	Gas test atmospheres	
MSAPMOHS220A	Provide initial first aid response	
MSAPMPER200C	Work in accordance with an issued permit	
MSAPMPER201A	Monitor and control work permits	
MSAPMPER202A	Observe permit work	*

MSAPMPER205C	Enter confined space	*
MSAPMSUP200A	Achieve work outcomes	
MSAPMSUP201A	Receive or despatch goods	
MSAPMSUP204A	Pack products or materials	
MSAPMSUP205A	Transfer loads	
MSAPMSUP210A	Process and record information	
MSAPMSUP240A	Undertake minor maintenance	
MSAPMSUP280A	Manage conflict at work	
MSAPMSUP291A	Participate in continuous improvement	
MSAPMSUP292A	Sample and test materials and product	
MSL952001A	Collect routine site samples	
PMAOHS211B	Prepare equipment for emergency response	
PMAOHS213B	Undertake fire control and emergency rescue	
PMAOHS214B	Undertake helicopter safety and escape	
PMAOHS215B	Apply offshore facility abandonment and sea survival procedures	
PMAOHS221B	Maintain first aid supplies and records	
PMAOMIR210B	Control evacuation to muster point	
PMASUP236B	Operate vehicles in the field	
PMASUP237B	Undertake crane, dogging and load transfer operations	
PMASUP241B	Maintain pipeline easements	
PMASUP242B	Monitor pipeline civil works	
PMASUP243B	Monitor and maintain pipeline coatings	
PMASUP244A	Prepare and isolate plant	

PMASUP245A	Break and make flanged joints using hand tools	
PMASUP246A	Disconnect and reconnect non-flared tube fitting joints	
RIIOHS204A	Work safely at heights	
RIIRIS201B	Conduct local risk control	
TLID2010A	Operate a forklift	

Group C

Unit code	Unit title	Prerequisites
FDFPH1001A	Follow work procedures to maintain Good Manufacturing Practice	
MEM11011B	Undertake manual handling	
MSAPMOHS100A	Follow OHS procedures	
MSAPMOPS100A	Use equipment	
MSAPMOPS102A	Perform tasks to support production	
MSAPMSUP101A	Clean workplace or equipment	
MSAPMSUP106A	Work in a team	
MSAPMSUP172A	Identify and minimise environmental hazards	
PMAOPS101C	Read dials and indicators	
PMAOPS105C	Select and prepare materials	

Up to **three (3)** relevant units may be selected from this Training Package, other endorsed Training Packages and accredited courses where those units are available at Certificate II.

Custom Content Section

Not applicable.