Australian Government

PMA50108 Diploma of Process Plant Technology

Release 2

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

PMA50108 Diploma of Process Plant Technology

Modification History

Release 2 - addition of one new elective in Group A

Description

The Diploma of Process Plant Technology has been developed as a technical qualification for use in the Chemical, Hydrocarbons and Refining Training Package (PMA08). This qualification covers the skills and knowledge required to perform advanced technical and para-professional operations within the chemical, hydrocarbon and refining industries

Job roles/employment outcomes
The Diploma of Process Plant Technology is intended for technologists or para-professionals who may have worked their way up through the chemical, hydrocarbons or refining certificate qualifications or who have entered the industry at this level, either from another industry or trade occupation.

The technologist will analyse performance and failure in equipment and products and will assist in the development on new and modified products.

The Diploma of Competitive Manufacturing MCM50104 is available for team leaders and managers at this level where the job requires sophisticated manufacturing practice skills rather than technical skills.

Application
This qualification is typically used to develop employees performing a highly technical role that includes an ability to lead others and conduct technical problem solving according to the needs of the work in the chemical, hydrocarbons or refining industries.

People with this qualification may be expected to work in one of the following sectors:

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

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 into the qualification
This qualification may be accessed by direct entry. The Diploma of Process Plant Technology also offers advanced technical training to people who have completed PMA40110 Certificate IV in Process Plant Technology or other relevant qualifications, or who have significant relevant industry experience without formal qualifications. Credit for this qualification may include units contained within relevant skill sets.

Pathways from the qualification
Further training pathways from this qualification include PMA60110 Advanced Diploma of Process Plant Technology, MSA60108 Advanced Diploma of Manufacturing Technology, MSA61108 Advanced Diploma of Competitive Manufacturing or other relevant qualifications, including appropriate vocational graduate qualifications.

Additional qualification advice
MSA51108 Diploma of Competitive Manufacturing is available for team leaders and managers at this level who already possess technical skills and who require additional manufacturing practice skills above those available in this qualification.

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

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Employability Skill	**Industry/enterprise requirements for this qualification include:**
Communication	• communicate with stakeholders • complete all required reports and records • advise stakeholders of the outcome • interpret workplace procedures and work instructions • communicate information about tasks/processes/events • identify and communicate with all relevant personnel • communicate with all relevant personnel, management and administration • undertake interactive workplace communication • undertake verbal and/or written reports where required
Teamwork	• working with technicians as part of a larger project • work autonomously or as part of a team • identify own role and responsibility within a team • undertake appropriate and effective communication with team members
Problem-solving	• evaluate and modify as required • apply knowledge of materials, product purpose and processes • check performance of equipment and make approved adjustments • make adjustments to remedy faults and non-conformity • clarifying and addressing potential issues • use material and process knowledge to solve problems
Initiative and enterprise	• make adjustments to improve equipment/plant performance • anticipate the impact of the process on the product • determine problems needing action • recommend required action • recognise problems in systems and documentation • critically analyse information • develop continuous improvement strategies • investigate, rectify and report non-conformance • use analytical and decision making skills • recommend corrective and/or optimization actions • monitor and adjust schedules in response to operational variations
Planning and organising	• implement within appropriate time constraints and relevant to

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
	the job • organise trials • develop and monitor quality systems • monitor and maintain product quality • recognise hazards and follow appropriate hazard control methods • identify requirements for materials, quality, production and equipment checks • identify most efficient and appropriate equipment • analyse equipment performance
Self-management	• operate within appropriate time constraints and work standards • select and use appropriate equipment, materials, processes and procedures • identify resource requirements, document and monitor • consistent performance should be demonstrated
Learning	• research and evaluate equipment and plant • ask questions to gain information • identify sources of information to expand knowledge and understanding • recognise limits of own professional expertise and consult specialists as necessary • participate in improvement procedures • access manufacturer's manuals/specifications to expand knowledge
Technology	• differentiate between products and materials based on their properties and uses • analyse response to changes in process conditions • apply the results of the analyses to typical applications • analyse equipment performance • determine theoretical performance • determine variation between theoretical and actual performance. • application principles to the design and use of equipment.

Packaging Rules

To be awarded the Diploma of Process Plant Technology competency must be achieved in **ten** (**10**) units of competency:

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

- **six** (**6**) elective units of competency from Groups A and B, 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
MSAPMOHS200A	Work safely
MSAPMSUP200A	Achieve work outcomes
MSAPMSUP210A	Process and record information

Elective units of competency

Select **six** (**6**) units from Groups A, B and C, as specified below:

- A minimum of **two** (**2**) from Group A
- The remainder may be chosen from Groups A, B and C (with a maximum of **two** (**2**) from Group C) to bring the total number of electives to **six** (**6**).

Note that **two (2)** elective units can be chosen from other qualifications in this Training Package, other endorsed Training Packages and accredited courses as specified in Group C.

Group A - Specialist electives

Unit code	Unit title	Prerequisites
PMAOPS500A	Optimise production systems	
PMAOPS501A	Provide operational expertise to a project team	

PMAOPS505A	Control the process in abnormal situations	
PMAOPS511B	Determine energy transfer loads	
PMAOPS512B	Determine mass transfer loads	
PMAOPS520C	Manage utilities	
PMAOPS521C	Plan plant shutdown	
PMAOPS522A	Coordinate plant shut down	
PMAOPS550B	Develop a colour formulation	PMAOPS350B PMAOPS450B
PMAOPS560A	Plan and design tailings management facilities	

Up to **one** (**1**) specialist elective unit may be chosen from Group A in PMA60108 Advanced Diploma of Process Plant Technology

Group B

Unit code	**Unit title**	**Prerequisites**
MSAPMOHS503A	Maintain the workplace OHS management system	
MSAPMOHS510A	Manage risk	MSAPMOHS401A
MSAPMOHS601A	Establish workplace OHS management system	MSAPMOHS503A
PMAOHS502B	Contribute to safety case	
PMAOHS511A	Manage emergency incidents	PMAOMIR320B
PMAOMIR512B	Establish incident response preparedness and response systems	
PMAOMIR523B	Manage corporate media requirements in a crisis	
PMAOMIR575B	Coordinate welfare support activities in	

	response to an incident	
PMASUP520B	Review procedures to minimise environmental impact of process	
PMASUP540B	Analyse equipment performance	

Group C

Unit code	Unit title	Prerequisites
MSS403011A	Facilitate implementation of competitive systems and practices	
MSS403013A	Lead team culture improvement	
MSS403002A	Ensure process improvements are sustained	
MSS403030A	Improve cost factors in work practices	
MSS403040A	Facilitate and improve implementation of 5S	
MSS403041A	Facilitate breakthough improvements	
MSS404050A	Undertake process capability improvements	MSS404052A
MSS403051A	Mistake proof an operational process	
MSS404052A	Apply statistics to operational processes	
MSS404060A	Facilitate the use of planning software systems in a work area or team	
MSS404081A	Undertake proactive maintenance analyses	
MSS404082A	Assist in implementing a proactive maintenance strategy	
MSAENV472B	Implement and monitor environmentally sustainable work practices	
MSAPMOHS400A	Contribute to workplace OHS management system	MSAPMOHS300A
MSAPMOHS401A	Assess risk	

MSAPMOPS400A	Optimise process/plant area	MSAPMSUP390A
MSAPMOPS401A	Trial new process product	
MSAPMOPS404A	Co-ordinate maintenance	
MSAPMOPS405A	Identify problems in fluid power system	
MSAPMOPS406A	Identify problems in electronic control systems	
MSAPMPER400A	Coordinate permit process	
MSAPMSUP400A	Develop and monitor quality systems	
MSL954001A	Obtain representative samples in accordance with a sampling plan	
PMAOHS420B	Develop first aid procedures and manage resources	
PMAOMIR320B	Manage incident response information	
PMAOMIR407B	Audit incident preparedness and established response system	
PMAOMIR418B	Coordinate incident response	
PMAOMIR424B	Develop and maintain community relationships	
PMAOMIR430B	Conduct and assess incident exercises	
PMAOMIR444B	Develop incident containment tactics	
PMAOMIR449B	Monitor legal compliance obligations during incidents	
PMAOPS350B	Match and adjust colour	
PMAOPS402A	Respond to abnormal process situations	MSAPMSUP390A
PMAOPS405A	Operate complex control systems	
PMAOPS410B	Monitor remote production facilities	
PMAOPS411B	Manage plant shutdown and restart	
PMAOPS450B	Solve colour problems	

PMASUP410B	Develop plant documentation	
PMASUP420B	Minimise environmental impact of process	
PMASUP432B	Coordinate pipeline projects	
PMASUP440B	Commission/recommission plant	
PMASUP441C	Decommission plant	
PMASUP445A	Participate in HAZOP studies	
TAEASS401B	Plan assessment activities and processes	
TAEASS402B	Assess competence	
TAEASS403B	Participate in assessment validation	

Up to **two** (**2**) relevant units may be chosen from this Training Package, other endorsed Training Packages and accredited courses where those units are available at Certificate IV or above.