



Australian Government

PMA40116 Certificate IV in Process Plant Technology

Release 1

PMA40116 Certificate IV in Process Plant Technology

Modification History

Release 1. Supersedes and is equivalent to PMA40113 Certificate IV in Process Plant Technology

Qualification Description

The PMA40116 Certificate IV in Process Plant Technology is a technical qualification for plant technicians and operations technicians who will typically be involved in solving complex problems which require theoretical knowledge, combined with an understanding of the production process and equipment across the plant. This qualification is typically used to develop employees performing a technical role that includes an ability to work independently and conduct technical problem solving according to the needs of the work in the chemical, hydrocarbons and refining industries.

Other non-technical Certificate IV qualifications are available for production support employees at this level, such as MSM40116 Certificate IV in Process Manufacturing.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To be awarded the PMA40116 Certificate IV in Process Plant Technology competency must be achieved in **twenty-six (26)** units of competency:

- **five (5)** core units of competency
- **twenty-one (21)** elective units of competency, chosen as specified below:
 - a minimum of **one (1)** unit of competency from Group A
 - the remainder may be chosen from Groups A, B and C (with a maximum of **eighteen (18)** from Group C) to bring the total number of electives to **twenty-one (21)**.

Note: **Five (5)** elective units can be chosen from other qualifications in this Training Package, other endorsed Training Packages and accredited courses, as specified in Groups B and C.

Note: Where prerequisite units are identified they must be counted in the total number of units required for achievement of the qualification.

Core units of competency

Complete all **five (5)** units from the following list.

Unit code	Unit title	
MSMENV272	Participate in environmentally sustainable work practices	
MSMSUP100	Apply workplace context to own job	
MSMSUP102	Communicate in the workplace	
MSMWHS110	Follow emergency response procedures	
MSMWHS200	Work safely	
ELECTIVE UNITS		
Group A – Technical electives		
Unit code	Unit title	Prerequisites
MSMOPS400	Optimise process/plant area	
MSMOPS401	Trial new process or product	

PMAOPS402	Respond to abnormal process situations	MSMSUP390
PMAOPS405	Operate complex control systems	
PMAOPS410	Operate remote production facilities	
PMAOPS411	Manage plant shutdown and restart	
PMAOPS433	Manage wells and gathering systems	
PMAOPS434	Commission wells and gathering systems	
PMAOPS450	Solve colour problems	
PMAOPS460	Monitor and operate tailings management facilities	
Group B – Support electives		
Unit code	Unit title	Prerequisites
MSMENV472	Implement and monitor environmentally sustainable work practices	
MSL954001	Obtain representative samples in accordance with a sampling plan	
MSMPER400	Coordinate permit process	MSMPER300
MSMSUP400	Develop and monitor quality systems	
MSMSUP404	Coordinate maintenance	
MSMSUP405	Identify problems in fluid power system	
MSMSUP406	Identify problems in electronic control systems	
MSMWHS400	Contribute to WHS management system	
MSMWHS401	Assess risk	
MSS403002A	Ensure process improvements are sustained	
MSS403011A	Facilitate implementation of competitive systems and practices	

MSS403013A	Lead team culture improvement	
MSS403030A	Improve cost factors in work practices	
MSS403040A	Facilitate and improve implementation of 5S	
MSS403041A	Facilitate breakthrough improvements	
MSS403051A	Mistake proof an operational process	
MSS404050A	Undertake process capability improvements	MSS404052
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	
MSS405052A	Apply statistics to operational processes	
PMAOMIR305	Operate panel during an emergency	PMAOPS305
PMAOMIR407	Audit incident preparedness and established response system	
PMAOMIR418	Coordinate incident response	
PMAOMIR424	Develop and maintain community relationships	
PMAOMIR430	Conduct and assess incident exercises	
PMAOMIR444	Develop incident containment tactics	
PMAOMIR449	Monitor legal compliance obligations during incidents	
PMASUP410	Develop plant documentation	
PMASUP420	Minimise environmental impact of process	
PMASUP432	Coordinate pipeline projects	MSMPER300
PMASUP440	Commission/recommission plant	
PMASUP441	Decommission plant	
PMASUP444	Plan plant preparation and isolation	

PMASUP445	Participate in HAZOP studies	PMAOPS280
PMAWHS420	Develop first aid procedures and manage resources	
TAEASS401	Plan assessment activities and processes	
TAEASS402	Assess competence	
TAEASS403	Participate in assessment validation	
TAEASS502	Design and develop assessment tools	
Up to one (1) relevant unit may be chosen from this Training Package, other endorsed Training Packages and accredited courses, where that unit is packaged in a Certificate IV or Diploma.		
Group C – Other electives		
Unit code	Unit title	Prerequisites
FDFPH1001A	Follow work procedures to maintain Good Manufacturing Practice	
FDFPH2001A	Apply Good Manufacturing Practice procedures	
FDFPHGMP3A	Monitor the implementation of Good Manufacturing Practice procedures	
HLTAID003	Provide first aid	
MEM04001B	Operate melting furnaces	
MEM05012C	Perform routine manual metal arc welding	
MEM09002B	Interpret technical drawing	
MEM09003B	Prepare basic engineering drawing	MEM09002B
MEM11011B	Undertake manual handling	
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	

MEM18011C	Shutdown and isolate machine/equipment	
MSMBLIC001	License to operate a standard boiler	
MSMBLIC002	License to operate an advanced boiler	
MSL952001	Collect routine site samples	
MSL973001	Perform basic tests	
MSMENV172	Identify and minimise environmental hazards	
MSMOPS100	Use equipment	
MSMOPS102	Perform tasks to support production	
MSMOPS200	Operate equipment	
MSMOPS212	Use organisation computers or data systems	
MSMPER200	Work in accordance with an issued permit	
MSMPER201	Monitor and control work permits	
MSMPER202	Observe permit work	
MSMPER205	Enter confined space	MSMPER200
MSMPER300	Issue work permits	MSMWHS201
MSMSUP101	Clean workplace or equipment	
MSMSUP106	Work in a team	
MSMSUP200	Achieve work outcomes	
MSMSUP204	Pack products or materials	
MSMSUP205	Transfer loads	
MSMSUP210	Process and record information	
MSMSUP240	Undertake minor maintenance	
MSMSUP273	Handle goods	
MSMSUP280	Manage conflict at work	
MSMSUP291	Participate in continuous improvement	

MSMSUP292	Sample and test materials and product	
MSMSUP300	Identify and apply process improvements	
MSMSUP301	Apply HACCP to the workplace	
MSMSUP303	Identify equipment faults	
MSMSUP309	Maintain and organise workplace records	
MSMSUP310	Contribute to development of workplace documentation	
MSMSUP330	Develop and adjust a production schedule	
MSMSUP382	Provide coaching/mentoring in the workplace	
MSMSUP383	Facilitate a team	
MSMSUP390	Use structured problem-solving tools	
MSMWHS100	Follow WHS procedures	
MSMWHS201	Conduct hazard analysis	
MSMWHS205	Control minor incidents	
MSMWHS210	Undertake first response to non-fire incidents	
MSMWHS212	Undertake first response to fire incidents	
MSMWHS216	Operate breathing apparatus	
MSMWHS217	Gas test atmospheres	
MSMWHS218	Control the risks of falls	
MSMWHS300	Facilitate the implementation of WHS for a work group	MSMWHS200
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	
NWP357B	Monitor, operate and control reverse osmosis and nano-filtration processes	
PMAOMIR210	Control evacuation to muster point	
PMAOMIR301	Undertake initial rescue	MSMWHS216 MSMWHS217 HLTAID003
PMAOMIR302	Respond to a helideck incident	
PMAOMIR317	Facilitate search and rescue operations	
PMAOMIR320	Manage incident response information	
PMAOMIR321	Manage communication systems during an incident	
PMAOMIR346	Assess and secure an incident site	
PMAOPS101	Read dials and indicators	
PMAOPS105	Select and prepare materials	
PMAOPS201	Operate fluid flow equipment	
PMAOPS202	Operate fluid mixing equipment	
PMAOPS204	Select and use utilities and services	
PMAOPS205	Operate heat exchangers	
PMAOPS208	Operate chemical separation equipment	
PMAOPS210	Operate solids handling equipment	
PMAOPS211	Operate manufacturing extrusion systems	

PMAOPS213	Package product/material	
PMAOPS216	Operate local control system	
PMAOPS217	Operate wet milling equipment	
PMAOPS220	Monitor chemical reactions in the process	
PMAOPS221	Operate and monitor prime movers	
PMAOPS222	Operate and monitor pumping systems and equipment	PMAOPS221 OR PMAOPS324
PMAOPS223	Operate and monitor valve systems	
PMAOPS224	Provide fluids for utilities and support	
PMAOPS226	Monitor and operate flare systems	
PMAOPS230	Monitor, operate and maintain pipeline stations and equipment	
PMAOPS231	Control gas odourisation	
PMAOPS232	Operate filtration equipment	
PMAOPS233	Monitor wells and gathering systems	
PMAOPS234	Monitor and operate low pressure compressors	
PMAOPS236	Monitor continuous process plant	
PMAOPS240	Store fluids in bulk	
PMAOPS241	Operate Joule-Thomson effect device	
PMAOPS242	Moor ships for transfer of bulk processed particulates or fluids	
PMAOPS246	Operate separation equipment	
PMAOPS247	Operate powered separation equipment	
PMAOPS260	Conduct screening operations	
PMAOPS261	Operate bulk solids loading equipment	
PMAOPS262	Operate digestion equipment	

PMAOPS263	Operate leaching equipment	
PMAOPS264	Operate solvent extraction equipment	
PMAOPS265	Operate magnetic/electrical separation equipment	
PMAOPS280	Interpret process plant schematics	
PMAOPS290	Operate a biotreater	
PMAOPS300	Operate a production unit	
PMAOPS301	Operate a distillation unit	
PMAOPS302	Operate reactors and reaction equipment	
PMAOPS303	Operate furnaces to induce reaction	
PMAOPS304	Operate and monitor compressor systems and equipment	
PMAOPS305	Operate process control systems	
PMAOPS307	Transfer bulk fluids into/out of storage facility	
PMAOPS308	Organise storage and logistics of general materials	
PMAOPS309	Operate solids handling/ storage equipment	
PMAOPS312	Undertake ship loading/unloading operations	
PMAOPS319	Adjust batch	
PMAOPS320	Conduct artificial lift	
PMAOPS321	Undertake well management	
PMAOPS323	Operate and monitor heating furnace	
PMAOPS324	Operate a gas turbine	
PMAOPS325	Generate electrical power	
PMAOPS326	Operate gas absorption unit	
PMAOPS327	Operate fixed bed adsorption unit	

PMAOPS329	Operate liquid extraction unit	
PMAOPS330	Communicate and monitor pipeline activities	
PMAOPS333	Operate wells and gathering systems	
PMAOPS335	Conduct pipeline pigging	
PMAOPS340	Operate cryogenic processes	
PMAOPS350	Match and adjust colour	
PMAOPS360	Operate a metalliferous kiln/furnace	
PMAOPS361	Operate a smelting furnace	
PMAOPS362	Operate a blast furnace	
PMAOPS364	Operate an electrochemical process	
PMAOPS365	Operate pelletising equipment	
PMAOPS366	Operate sintering equipment	
PMAOPS390	Operate a biochemical process	
PMASMELT260	Form carbon anodes	
PMASMELT261	Bake carbon anodes	
PMASMELT262	Clean and strip anode rods	
PMASMELT263	Spray carbon anodes	
PMASMELT264	Start up reduction cells	
PMASMELT265	Operate reduction cells	
PMASMELT266	Deliver molten metal	
PMASMELT267	Cast ingots	
PMASMELT268	Operate vertical direct casting process	
PMASMELT269	Operate cell tending equipment	
PMASMELT270	Supply product from reduction cells	
PMASUP236	Operate vehicles in the field	

PMASUP237	Undertake crane, dogging and load transfer operations	
PMASUP241	Maintain pipeline easements	
PMASUP242	Monitor pipeline civil works	
PMASUP243	Monitor and maintain pipeline coatings	
PMASUP244	Prepare and isolate plant	
PMASUP245	Break and make flanged joints using hand tools	
PMASUP246	Disconnect and reconnect non-flared tube fitting joints	
PMASUP305	Operate Offshore Cranes	
PMASUP311	Operate communications hub	
PMASUP341	Monitor and maintain instrument and control systems	MSMPER300
PMASUP342	Monitor and maintain electrical systems	MSMPER300
PMASUP343	Monitor and maintain cathodic protection systems	
PMASUP344	Monitor and control repairs and modifications on operational pipe	
PMASUP345	Monitor vibration	
PMASUP346	Control corrosion	
PMASUP347	Undertake corrosion inspection on process plant	
PMAWHS211	Prepare equipment for emergency response	
PMAWHS213	Undertake fire control and emergency rescue	
PMAWHS214	Undertake helicopter safety and escape	
PMAWHS215	Apply offshore facility abandonment and sea survival procedures	
PMAWHS221	Maintain first aid resources and records	

PMAWHS310	Investigate incidents	
PMAWHS311	Lead emergency teams	
PMAWHS312	Command the operation of survival craft	
PMAWHS320	Provide advanced first aid response	HLTAID003
PMAWHS321	Provide first aid response in remote and/or isolated area	HLTAID003
PMC552002C	Operate equipment to blend/mix materials	
PMC552003C	Operate grinding equipment	
PMC552008B	Operate crushing equipment	
PMC562070B	Move materials	
PSPGEN015	Work effectively with diversity	
TAEASS301	Contribute to assessment	
TAEDEL301	Provide work skill instruction	
TLID2010	Operate a forklift	
UEPOPL001A	Licence to operate a steam turbine	
UEPOPS319B	Operate and monitor gas production plant	
<p>Up to four (4) relevant units may be chosen from this Training Package, other endorsed Training Packages and accredited courses where those units are packaged in a Certificate II, III or IV.</p>		

Qualification Mapping Information

Release 1. Supersedes and is equivalent to PMA40113 Certificate IV in Process Plant Technology

Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>