Australian Government

Department of Education, Employment and Workplace Relations

MEM30505 Certificate III in Certificate III in Engineering - Technical

Release: 2

MEM30505 Certificate III in Engineering - Technical

Modification History

Release 2 - Addition of new and updated elective units covering skills in computer-aided design/drafting (CAD) operations. Outcomes are equivalent.

Description

Not Applicable

Pathways Information

Not Applicable

Licensing/Regulatory Information

Not Applicable

Entry Requirements

Not Applicable

Employability Skills Summary

Employability Skill	**Industry/enterprise requirements for this qualification include**:
Communication	• Read, interpret, follow and communicate information on written job instructions, specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents • Produce detail drawings using standard engineering drawing symbols, references and terminology • Prepare drafts of functional and operational requirements • Liaise with internal and external stakeholders • Use communication and negotiation skills • Write reports
Teamwork	• Work alone or as part of a team • Verify operational requirements with supervisor or team
Problem-solving	• Analyse information according to enterprise and work requirements • Apply mathematical techniques to solve problems • Analyse manufacturing/ production system components • Apply engineering principles to translate designs into practical outcomes
Initiative and enterprise	• Be capable of applying the competency in new and different situations and contexts • Implement OHS risk management procedures • Economise material use and minimise waste and energy use • Modify work plan to overcome unforeseen difficulties or developments that occur as work progresses • Participate in improvement procedures including procedures to improve processes, quality, environmental performance, and internal/external customer/supplier relationships
Planning and organising	• Organise, categorise and sequence information • Plan and sequence work operations/complete activities/scheduled production • Source and organise required information from workshop manuals, customer specifications, product suppliers, designers or similar
Self-management	• Take responsibility for work outcomes • Carry out work safely and in accordance with company policy and procedures, manufacturer's recommendations and legislative requirements
Learning	• Use manuals, online help and other reference materials as required • Check and clarify task-related information • Assess and modify own work practices

	• Research equipment function and operational requirements • Maintain current knowledge of applicable standards, legislation, codes of practice and product/process developments
Technology	• Know functions and capabilities of various types of computing technology and software used in the workplace • Use a CAD program, computer and peripherals • Apply knowledge of basic mechanical components, drive components, pneumatic systems, hydraulic systems

Packaging Rules

The minimum requirements for achievement of the Certificate III in Engineering - Technical are:

- completion of the three (3) core units of competency listed below, and
- completion of seven (7) elective units of competency from the list below to bring the total of units selected to ten (10).

Note that when selecting elective units any prerequisite units must also be completed and can be counted towards the required number of elective units (refer to units and prerequisites listing in Appendix 2).
Note also that additional requirements apply to the selection of non-destructive testing units. These additional requirements are listed at the end of the elective units.
Up to two (2) appropriate electives may be chosen from other endorsed Training Packages and accredited courses where those units are available in a Certificate III. 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 NQC 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
MEM16006A	Organise and communicate information
MEM16008A	Interact with computing technology
MSAENV272B	Participate in environmentally sustainable work practices

Note: It is anticipated that many learners will have gained these skills through Year 12 school study and be eligible for recognition of prior learning. The actual awarding of the units will be subject to assessment by the Registered Training Provider offering the qualification.

Elective units

- Select seven (7) units from this list.

Unit code	Unit title	Prerequisites
MEM05051A	Select welding processes	
MEM09002B	Interpret a technical drawing	
MEM09201A	Work effectively in an engineering drafting workplace	
MEM09202A	Produce freehand sketches	
MEM09203A	Measure and sketch site information	
MEM09205A	Produce electrical schematic drawings	*
MEM09208A	Detail fasteners and locking devices in mechanical drawings	*
MEM09209A	Detail bearings, seals and other componentry in mechanical drawings	*
MEM09213A	Produce schematic drawings for hydraulic and pneumatic fluid power systems	*
MEM12023A	Perform engineering measurements	
MEM12024A	Perform computations	
MEM13013B	Work safely with ionizing radiation	
MEM15001B	Perform basic statistical quality control	
MEM16003B	Provide advanced customer service	
MEM18001C	Use hand tools	
MEM24001B	Perform basic penetrant testing	*
MEM24003B	Perform basic magnetic particle testing	*

MEM24005B	Perform basic eddy current testing	*
MEM24007B	Perform ultrasonic thickness testing	*
MEM24009B	Perform basic radiographic testing	*
MEM30005A	Calculate force systems within simple beam structures	*
MEM30006A	Calculate stresses in simple structures	*
MEM30007A	Select common engineering materials	
MEM30008A	Apply basic economic and ergonomic concepts to evaluate engineering applications	
MEM30009A	Contribute to the design of basic mechanical systems	*
MEM30010A	Set up basic hydraulic circuits	
MEM30011A	Set up basic pneumatic circuits	
MEM30012A	Apply mathematical techniques in a manufacturing, engineering or related environment	
MEM30013A	Assist in the preparation of a basic workplace layout	
MEM30014A	Apply basic just in time systems to the reduction of waste	
MEM30015A	Develop recommendations for basic set up time improvements	
MEM30016A	Assist in the analysis of a supply chain	
MEM30017A	Use basic preventative maintenance techniques and tools	
MEM30018A	Undertake basic process planning	
MEM30019A	Use resource planning software systems in manufacturing	*
MEM30020A	Develop and manage a plan for a simple manufacturing related project	
MEM30021A	Prepare a simple production schedule	

MEM30022A	Undertake supervised procurement activities	
MEM30023A	Prepare a simple cost estimate for a manufactured product	
MEM30024A	Participate in quality assurance techniques	*
MEM30025A	Analyse a simple electrical system circuit	*
MEM30026A	Select and test components for simple electronic switching and timing circuits	*
MEM30027A	Prepare basic programs for programmable logic controllers	
MEM30028A	Assist in sales of technical products/systems	
MEM30031A	Operate computer-aided design (CAD) system to produce basic drawing elements	
MEM30032A	Produce basic engineering drawings	
MEM30033A	Use computer-aided design (CAD) to create and display 3-D models	*
MSATCS301A	Interpret architectural and engineering design specifications for structural steel detailing	*
MSATCS302A	Detail bolts and welds for structural steelwork connections	*

Special requirements for the selection of Non-destructive Testing units
In order to ensure that the Certificate III in Engineering - Technical aligns to occupational outcomes in industry the following additional rules apply to the selection of the following units -

Only two (2) of the following units can be selected within the qualification:

MEM24001B	Perform basic penetrant testing	*
MEM24003B	Perform basic magnetic particle testing	*
MEM24005B	Perform basic eddy current testing	*

And, only one (1) of the following units can be selected within the qualification:

MEM24007B	Perform ultrasonic thickness testing	*
MEM24009B	Perform basic radiographic testing	*