



Australian Government

MEM07019 Program NC and CNC machining centre

Release: 2

MEM07019 Program NC and CNC machining centre

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM07019 Program NC and CNC machining centre (Release 1).

Release 1. Supersedes and is equivalent to MEM07019C Program NC/CNC machining centre.

Application

This unit of competency defines the skills and knowledge required to write and trial programs for numerically controlled (NC) and computer numerically controlled (CNC) machining centres.

The program may use common M and G codes and includes the programming of advanced operations, using canned cycles and sub-routines. Programs are trialled and edited as necessary to adjust operation of centre. Technical difficulties are resolved in consultation with appropriate technical advisers.

Where the selection and use of power tools/hand held operations is required unit MEM18002 Use power tools/hand held operations should also be selected.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: B

Unit Weight: 2

Pre-requisite Unit

MEM07015	Set computer controlled machines and processes
MEM07016	Set and edit computer controlled machines and processes
MEM07018	Write basic NC and CNC programs
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities

MEM16006 Organise and communicate information

MEM18001 Use hand tools

Plus, one or more of the following including their prerequisites:

MEM07005 Perform general machining

MEM07028 Operate computer controlled machines and processes

Competency Field

Machine and process operations

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Determine job requirements	1.1 Follow standard operating procedures (SOPs)
		1.2 Comply with work health and safety (WHS) requirements at all times
		1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4 Identify job requirements from specifications, drawings, job sheets or work instructions
		1.5 Select appropriate NC and CNC program elements for machine controller
2	Write basic NC and CNC machine program	2.1 Interpret engineering drawings to define machine function and tool path geometry
		2.2 Calculate coordinates for tool path or machine functions, as required
		2.3 Select advanced operations using canned cycles and sub-routines and apply
		2.4 Write program in standard code format in accordance with SOPs

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|----------------------|---|
| 3 | Trial program | <p>2.5 Produce operation sheets to specification in accordance with SOPs which includes appropriate Australian Standards, where required</p> <p>3.1 Operate machine in manual mode to test and prove program</p> <p>3.2 Edit program, if necessary to adjust operation, as required</p> <p>3.3 Check components to conform to specification</p> |
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Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, accessibility of the item, and local industry and regional contexts) are included.

Basic machines

incorporate one (1) or more of the following:

- single spindles
- single tools turrets
- B axis angular
- tool changers
- component loaders of a pallet type, but excludes multiple spindles and multiple axis

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM07019 Program NC and CNC machining centre (Release 1).

Release 1. Supersedes and is equivalent to MEM07019C Program NC/CNC machining centre.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>