



Australian Government

MEM09023 Create 3-D code files using computer-aided manufacturing system

Release: 1

MEM09023 Create 3-D code files using computer-aided manufacturing system

Modification History

Release 1. Supersedes and is equivalent to MEM09023A Create 3D code files using computer aided manufacturing system

Application

This unit of competency defines the skills and knowledge required to produce 3-D computer-aided manufacturing (CAM) code files from existing computer-aided design (CAD) models or from data collected by sample measurement. It includes managing files and tools and customising installed software.

This unit typically applies in a manufacturing setting where components are machined or processed within a CAM environment.

Where a CAD system is also used then unit MEM09009 Create 2-D drawings using computer-aided design system and unit MEM09010 Create 3-D models using computer-aided design system, should also be selected as appropriate.

Where components are machined following development of code files then appropriate computer numerically controlled (CNC) machining units should also be selected.

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

Band: B

Unit Weight: 6

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM09022	Create 2-D code files using computer-aided manufacturing system
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM16008	Interact with computing technology

Competency Field

Drawing, drafting and design

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	Identify job requirements from specifications, job sheets or associated work instructions
2	Prepare 3-D environment	2.1	Customise system variables, user interface and software defaults to suit job requirements
		2.2	Establish coordinate system, orientation and views according to job requirements
3	Manipulate 3-D models	3.1	Import models using a variety of file formats
		3.2	Orient existing 3-D models and manipulate to job requirements
		3.3	Link model entities to database attributes to suit job requirements
		3.4	Develop manufacturing data from the 3-D CAM model
4	Produce output and manage 3-D code files	4.1	Save files in a variety of formats for retrieval according to SOPs
		4.2	Verify CAM model for logical sequencing and correct manufacturing procedures
		4.3	Produce code from the 3-D CAM model

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, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Customising includes the use of one (1) or more of the following:

- macros
- menus
- default settings

Entities include one (1) or more of the following:

- lines
- arcs
- primitives, including:
 - spheres
 - surfaces
 - solids
 - cones
 - cylinders
 - boxes

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

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