MEM09010 Create 3-D models using computer-aided design system

Release: 1

MEM09010 Create 3-D models using computer-aided design system

Modification History

Release 1. Supersedes and is equivalent to MEM09010C Create 3D models using computer aided design system

Application

This unit of competency defines the skills and knowledge required to prepare the 3-D computer-aided design (CAD) environment, create and modify 3-D models, and produce output from the 3-D model using computer equipment and industrial software. It applies to the fields of mechanical, electrical or electronic, fabrication and fluid power.

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

Band: B

Unit Weight: 4

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM09009	Create 2-D drawings using computer-aided design 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	Establish coordinate system to meet job requirements
	2.2	Establish orientation and views
3 **Create and modify 3-D model**	3.1	Create and manipulate entities in 3-D space
	3.2	Create surfaces in 3-D space to job requirement, including ruled and revolved
	3.3	Modify existing 3-D model
4 **Produce output from 3-D model**	4.1	Save file in various formats for retrieval in accordance with SOPs
	4.2	Extract physical properties to job requirement

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.

Entities include one (1) or more of the following:	• arcs • lines • spheres • cones • cylinders • boxes
Physical properties include the following:	• volume • mass • centre of gravity

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM09010C Create 3D models using computer aided design system

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2