Australian Government

MEM30031 Operate computer-aided design (CAD) system to produce basic drawing elements

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM30031A Operate computer-aided design (CAD) system to produce basic drawing elements.

Application

This unit of competency defines the skills and knowledge required to apply functions of computer-aided design (CAD) software programs that are typically used in the production of detail drawings.

This unit is suitable for those working within a CAD or drafting work environment and may be applied across engineering and manufacturing environments. It covers competent use of a CAD program to perform basic drawing tasks used in the development of detail drawings. Drawings may include plans, diagrams, charts, circuits, systems or schematics.

All work is carried out under supervision.

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

Pre-requisite Unit

Nil

Competency Field

Drawing, drafting and design

Elements and Performance Criteria

Elements	**Performance Criteria**
Elements describe the essential *outcomes.*	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Confirm drawing requirements	1.1 Follow standard operating procedures (SOPs) and comply with work health and safety (WHS) requirements at all times 1.2 Confirm purpose, scope, and information and presentation requirements for drawing 1.3 Review available information relevant to project and work requirements and identify and address further information needs 1.4 Identify computing equipment and software used in the organisation

Elements	**Performance Criteria**
Elements describe the essential *outcomes.*	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
	1.5 Identify workflow and procedures for work supervision
2. Identify key features of CAD software	2.1 Describe types of CAD software used for detail drafting, their key features and suitability for producing specific drawing outcomes 2.2 Identify differences in CAD process to generate 2D drawings and 3D models, and reasons for each presentation 2.3 Identify differences in CAD process to generate single and multiple view drawings, and reasons for each presentation 2.4 Identify CAD software used in the organisation and confirm compatibility with other software programs and peripheral equipment 2.5 Identify software features for linked specifications, catalogues or materials ordering
3. Access software and set up for drawing work	3.1 Open software and navigate organisational filing and library system 3.2 Select organisational and software templates and determine uses 3.3 Select organisational symbols, codes and standards to be applied in drafting work and how these are accessed and applied 3.4 Apply workplace procedures to retrieve and manipulate required information and navigate computing technology 3.5 Set up working environment to meet organisational requirements
4. Produce basic drawing elements	4.1 Use CAD functions to produce basic drawing elements 4.2 Use editing and transfer tools and methods to modify drawing elements 4.3 Apply dimensions, text and symbols to drawing elements 4.4 Import and export files into and out of working space 4.5 Generate different views and perspectives 4.6 Organise presentation of work to meet job requirements
5. Complete CAD operations	5.1 Save and file drawing elements in accordance with organisational procedures 5.2 Print drawing elements and evaluate presentation 5.3 Evaluate work and identify areas for improvement 5.4 Close applications, perform CAD housekeeping and maintain organisational filing system

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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.	
CAD software includes one or more of the following:	• AutoCAD • Inventor • Revit • Solidworks • ProSteel • XSteel. • software with the ability to create designs in 2D or 3D to visualise construction, and contains functions of development, modification and optimisation of the design process.
Basic drawing elements include one or more of the following:	• points • line angles • circles • arcs • planes • figures • solids • squares • rectangles • triangles • bisected lines • dividing lines • polygon • ellipse • spline • dimension • hatch.
Editing and transfer tools and methods include one	• delete • fillet

or more of the following:	• chamfer • erase • trim/extend • break • undo and redo commands • zooming and panning • moving, copying, rotating and mirroring • polar and rectangular duplication • object snaps • dimensions • selecting entities • dividing • scaling • measuring • grouping.

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