Australian Government

Department of Education, Employment and Workplace Relations

MEM30001A Use computer aided drafting systems to produce basic engineering drawings

Release: 1

MEM30001A Use computer aided drafting systems to produce basic engineering drawings

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers producing basic engineering drawings using a CAD system, under the direction of a supervisor.

Application of the Unit

Application of the unit	This unit applies to the production of drawings according to defined parameters and predetermined specifications that include materials, tolerances, codes and other specifications. All work is conducted under supervision. Standard CAD software would be used including inbuilt file management, macros and reports. Drawings include plans, diagrams, charts, circuits, systems or schematics. If basic engineering drawings are required, then Unit MEM30002A (Produce basic engineering graphics) should be selected. If detailed engineering drawings are required, then Unit MEM30003A (Produce detailed engineering drawings) should be selected. **Band**: **0** **Unit Weight**: **0**

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM16006A	Organise and communicate information
	MEM16008A	Interact with computing technology

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare the CAD environment	1.1. All relevant manuals, instructions and operating procedures for the CAD software are obtained in accordance with workplace procedures. 1.2. The CAD package is booted up in accordance with workplace procedures. 1.3. Screen display areas and basic parameters are set in accordance with instructions.
2. Produce a basic drawing	2.1. Basic CAD drawings are created and guidance is sought as required. 2.2. Drawings are prepared in accordance with AS 1100 or equivalent or in accordance with standard operating procedures. 2.3. As required, CAD drawings are reviewed with supervisor and/or other designated staff in accordance with company procedures.
3. Modify existing CAD drawings	3.1. Existing CAD drawings are located and modified by adding, deleting or changing drawing elements within that drawing.
4. Produce output	4.1. Drawing files are saved in the appropriate format in accordance with standard operating procedures. 4.2. Drawing files are printed out using plotter or equivalent devices.
5. Perform exit and shut-down procedures	5.1. Programs and computer are shut down in accordance with workplace procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: • reading and interpreting engineering specifications • organising information • using computer and peripherals • using CAD program

REQUIRED SKILLS AND KNOWLEDGE
• preparing simple drawings in plane orthogonal, isometric projection or equivalent
Required knowledge
Look for evidence that confirms knowledge of: • CAD program capabilities and processes

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to use computer aided drafting systems to produce basic engineering drawings. Competency in this unit cannot be claimed until all prerequisites have been satisfied.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with producing basic engineering drawings using computer aided drafting systems, or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes,

EVIDENCE GUIDE	
	standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Basic parameters	Include layer or level, line type, line width, colour and text format etc.
Basic CAD drawings	Include the following characteristics: lines, arcs, circles, polygons, ellipses, hatching or filling of areas, text, dimensions and tangents
Equivalent devices	May include ink jet printers or the like

Unit Sector(s)

Unit sector	

Co-requisite units

Co-requisite units		

Competency field

Competency field	Engineering technician