DCSCAD616: Use CAD in Engineering

UNIT CODE		**DCSCAD616**	
UNIT TITLE		**Use CAD in engineering**	
APPLICATION		This unit describes the performance outcomes, skills and knowledge required to operate a standard CAD software package, using advanced features, in order to prepare complex engineering drawings to AS 1100. The unit of competency is applied by drafting personnel in a civil and structural engineering environment operating as part of an engineering design team. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.	
PREREQUISITE UNIT(S)		▪ DCSBCE602 Use basic CAD in engineering ▪ DCSGRE603 Use graphics in engineering	
ELEMENTS		**PERFORMANCE CRITERIA**	
Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Produce drawings.	1.1	Produce a multi-view drawing from an unscaled model.
		1.2	Produce detail views at different scales from an unscaled 2D model.
2	Create and use CAD library parts.	2.1	Construct and save library parts (blocks and dynamic blocks) suitable for standardisation.
		2.2	Insert library parts at a specified scale.
		2.3	Edit library parts prior to or upon insertion.
		2.4	Add attribute data to library parts.
3	Construct complex elements using CAD.	3.1	Construct examples of complex shapes relevant to engineering drawing using poly lines and splines.
		3.2	Edit complex shapes.
4	Extract and manipulate data from a drawing.	4.1	Extract and insert data into a destination file.
		4.2	Format data in a destination file.
		4.3	Analyse data for a specific purpose.
		4.4	Insert numerical, textual or pictorial data from a spreadsheet, word processor or database into a drawing
5	Create assembly drawings to AS 1100 standards.	5.1	Combine library files to form an assembly drawing.
		5.2	Link library files to the assembly drawing file in accordance with AS 1100.

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		5.3	Update a library file within the assembly drawing or the library file drawing.
		5.4	Link and view drawings from different disciplines in a large project and view holistically.

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

UNIT MAPPING INFORMATION
No equivalent units.

TITLE	**Assessment requirements for DCSCAD616 Use CAD in engineering**
PERFORMANCE EVIDENCE	To achieve competency in this unit, a person must satisfy the requirements of the elements and performance criteria, foundation skills and range of conditions included in the unit. The person must also: • use CAD software to create at least 2 drawings that incorporate library parts, complex shapes and imported data, in accordance with AS 1100. Note: If a specific volume or frequency is not stated, then evidence must be provided at least once for each criterion.
KNOWLEDGE EVIDENCE	To achieve competency in this unit, a person must demonstrate knowledge of: • procedures for preparing detail views of a 2D model and setting scale for each view. • procedures for drawing complex shapes, relevant for civil and structural engineering drawings. • controlling dimensions in different scaled views so that all dimensions are the same format (to AS 1100) • procedures for saving drawing files • CAD program capabilities and processes • terminology used in drawing and CAD software

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ASSESSMENT CONDITIONS	**Assessment Conditions:** All assessment must be completed in accordance with work health and safety standards. When assessments are conducted remotely, invigilation software must be used to ensure authenticity of work completed. Model answers or marking guides must be provided for all assessments to ensure reliability of assessment judgements when marking is undertaken by different assessors. Assessors must gather a range of evidence that is valid, sufficient, authentic, and current. Questioning techniques must not require language, literacy and numeracy skills beyond those required in this module. The candidate must have access to all tools, equipment, materials and documentation required. **Assessor Requirements:** Assessment must be conducted only by persons who: • hold vocational competencies at least to the level being delivered and assessed • maintain current industry skills directly relevant to the training and assessment being provided • hold a tertiary qualification in engineering or a related field • meet the assessor requirements specified in the current Standards for Registered Training Organisations (RTOs) • undertake ongoing professional development in vocational training, learning, and assessment, including competency-based training and assessment, as required by their RTO. The RTO must also ensure that trainers and assessors keep their industry knowledge up to date through ongoing professional development. The RTO must take appropriate steps, as an ongoing procedure, to verify information about trainer and assessor's qualifications.