



Australian Government

Department of Education, Employment and Workplace Relations

NWP558 Use computer aided drafting systems

Release: 1

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Modification History

NWP558 Release 1: Primary release.

Unit Descriptor

This unit of competency sets out the knowledge and skills required to apply computer aided drafting (CAD) using 2D techniques for engineering applications. This includes complex and advanced applications of computer aided drafting systems.

Application of the Unit

This unit applies to any para-professional required to develop plans and designs using CAD systems.

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

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

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 tasks you need to be able to perform, to demonstrate that you can achieve the element. Where ***bold italicised*** text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

- | | |
|--|---|
| 1 Prepare for drawing | <p>1.1 Determine the extent of drawing task from documentation or reports and from discussion with <i>appropriate personnel</i>.</p> <p>1.2 Obtain <i>resources</i> needed for the task in accordance with <i>enterprise procedures</i> and check for correct operation and safety.</p> <p>1.3 Consult appropriate personnel to ensure the work is co-ordinated effectively with others involved at the work site.</p> |
| 2 Perform drawing | <p>2.1 Carry out <i>drawing task</i> industry standards and enterprise procedures.</p> <p>2.2 Select methods for dealing with unexpected situations based on discussions with appropriate personnel, job specifications and enterprise procedures.</p> |
| 3 Complete and report on drawing task | <p>3.1 Shut down equipment according to enterprise procedures.</p> <p>3.2 Document drawing task and notify appropriate personnel in accordance with enterprise procedures.</p> |

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills:

- use personal computer to access and use CAD software
- interpret advanced drawings

Required knowledge:

- use of CAD software used in organisation
- geometric construction methods
- radiations in three dimensions using total stations and/or theodolite and EDM/Data recorder
- CAD software functions including simple drawing production, methodology for drawing variables and creating layers

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.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The candidate should demonstrate the ability to:

- use computer aided drawing systems effectively to produce 2D drawings representing engineering applications, including:
 - a wide range of geometric shapes
 - efficient use of library files
 - application of the appropriate drawing standards
 - selection of most relevant drawing techniques
 - hard copies of drawing

Context of and specific resources for assessment

Access to the workplace and resources including:

- documentation that should normally be available in a water industry organisation
- workplace specific equipment and technology
- supervision and experienced team members to provide observations, feedback and third party reports
- enterprise operating procedures and work allocation
- relevant codes, standards, and government regulations.

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and/or assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence require that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice
- a decision of competence should only be made when the assessor has complete confidence in the person's competence over time and in various contexts
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and

supplementary evidence

- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be authenticated and show that it represents competency demonstrated over a period of time
- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit.

In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in a manner appropriate to the skill levels of the candidate, any cultural issues that may affect responses to the questions, and reflecting the requirements of the competency and the work being performed.

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.

Appropriate personnel may include:

- supervisor
- leading hand
- foreman
- manager
- site engineer
- trainer
- mentor
- teacher
- team member

Resources may include:

- computer software
- library files
- stationery
- drawing standards
- software reference documentation
- equipment
- computer hardware
- printers
- plotter
- digitisers

Enterprise procedures may include:

- the use of tools and equipment
- instructions, including job sheets, cutting lists, plans, drawings and designs
- reporting and communication
- manufacturers' specifications and operational procedures

Drawing task may include:

- complex 2D engineering drawings requiring
- the use of a wide range of features typically
- found in commercial drawing packages

Unit Sector(s)

Not applicable.

Competency Field

Drafting and CAD Engineering.