Australian Government

Department of Education, Employment and Workplace Relations

FPICOT3239B Create drawings using computer aided design systems

Release: 1

FPICOT3239B Create drawings using computer aided design systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to prepare the computer aided design (CAD) environment, create two dimensional (2D) drawings and produce output, including linked material lists

General workplace legislative and regulatory requirements apply to this unit; however there are no specific licensing or certification requirements at the time of publication

This unit replaces FPICOT3239A Create drawings using computer aided design systems

Application of the Unit

Application of the unit

This unit involves creating drawings using computer aided design systems in a forestry office setting

The skills and knowledge required for competent workplace performance are to be used within the scope of the person's job and authority

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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 for drawing	1.1. Applicable **occupational health and safety** (OHS), ***environmental***, ***legislative*** and ***organisational*** requirements relevant to creating drawings electronically are identified and followed
	1.2. Types of ***drawings*** to be created with ***CAD systems*** are identified and clarified with ***appropriate personnel***
	1.3. ***Equipment*** is selected appropriate to work requirements and checked for operational effectiveness in line with manufacturer recommendations
	1.4. CAD process is planned in line with site procedures
	1.5. ***Communication*** with others is established and maintained in line with OHS requirements
2. Set up CAD environment	2.1. ***System variables*** are customised to suit standard operating procedure
	2.2. ***Menus*** are customised to suit standard operating procedure
	2.3. ***Drawing defaults*** are customised to standard operating procedure
	2.4. ***Macros*** are developed to standard operating procedure
3. Create 2D drawings	3.1. Drawings are created using the full capability of the available software system
	3.2. Drawing ***entities*** are linked to database ***attributes*** to suit job requirements
	3.3. ***Detailed views*** are created using various ***scales*** to meet job requirements
	3.4. ***Files*** are saved in various formats in line with standard operating procedures
	3.5. Linked entities are formatted as ***materials lists*** to meet job requirements
	3.6. ***Supplementary data*** is extracted from drawings to meet job requirements
	3.7. Drawing process and equipment faults are ***recorded and reported*** to the appropriate personnel

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills include:

- Technical skills sufficient to use relevant tools, machinery and equipment; create drawings using CAD systems
- Communication skills sufficient to use appropriate communication and interpersonal techniques with colleagues and others
- Literacy skills sufficient to record and report workplace information; maintain documentation
- Problem solving skills sufficient to identify problems and equipment faults; demonstrate appropriate response procedures

Required knowledge include:

- Applicable commonwealth, state or territory legislation, regulations, standards, codes of practice and established safe practices relevant to the full range of processes for creating drawings using CAD systems
- Environmental protection requirements, including the safe disposal of waste material
- Organisational and site standards, requirements, policies and procedures for creating drawings using CAD systems
- Environmental risks and hazards
- Using energy effectively and efficiently
- Using material effectively and efficiently
- Characteristics of timber, timber products and defects
- Setup of CAD programs
- Building products
- Drawing techniques and principles
- Computer operation
- Standard material sizes
- Established communication channels and protocols
- Problem identification and resolution strategies, and common fault finding techniques
- Types of tools and equipment, and procedures for their safe use and maintenance
- Appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks
- Procedures for recording and reporting workplace records and information

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 provide evidence that they can safely and efficiently create drawings using CAD systems according to organisational requirements
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to, and satisfy, all of the requirements of the elements of this unit and include demonstration of: • following applicable commonwealth, state or territory legislative and regulatory requirements and codes of practice relevant to creating drawings using CAD systems • following organisational policies and procedures relevant to creating drawings using CAD systems • communicating and working safely with others in the work area • creating drawings using CAD systems in line with site requirements • producing linked materials lists

Context of and specific resources for assessment	• Competency is to be assessed in the workplace or realistically simulated workplace
	• Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
	• Assessment of required knowledge, other than confirmatory questions, will usually be conducted in an off-site context
	• Assessment is to follow relevant regulatory or Australian Standards requirements
	• The following resources should be made available:
	  • workplace location or simulated workplace
	  • materials and equipment relevant to undertaking work applicable to this unit
	  • specifications and work instructions

Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package • Assessment methods must confirm consistency and

EVIDENCE GUIDE

accuracy of performance (over time and in a range of workplace relevant contexts) together with application of required knowledge

- Assessment must be by direct observation of tasks, with questioning on required knowledge and it must also reinforce the integration of key competencies
- Assessment methods must confirm the ability to access and correctly interpret and apply the required knowledge
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency
- The assessment environment should not disadvantage the candidate
- Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English
- Where the participant has a disability, reasonable adjustment may be applied during assessment
- Language and literacy demands of the assessment task should not be higher than those of the work role

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.

OHS requirements: are to be in line with applicable commonwealth, state or territory legislation and regulations, and

RANGE STATEMENT

	organisational safety policies and procedures, and may include: • personal protective equipment and clothing • safety equipment • first aid equipment • fire fighting equipment • hazard and risk control • fatigue management • elimination of hazardous materials and substances • manual handling including shifting, lifting and carrying
Environmental requirements may include:	• legislation • organisational policies and procedures • workplace practices
Legislative requirements:	are to be in line with applicable commonwealth, state or territory legislation, regulations, certification requirements and codes of practice and may include: • award and enterprise agreements • industrial relations • Australian Standards • confidentiality and privacy • OHS • the environment • equal opportunity • anti-discrimination • relevant industry codes of practice • duty of care
Organisational requirements may include:	• legal • organisational and site guidelines • policies and procedures relating to own role and responsibility • quality assurance • procedural manuals • quality and continuous improvement processes and standards • OHS, emergency and evacuation procedures • ethical standards • recording and reporting requirements

RANGE STATEMENT

	• equipment use, maintenance and storage requirements • environmental management requirements (waste minimisation and disposal, recycling and re-use guidelines)
Drawings may include:	• plans • diagrams • charts • elevations
CAD systems	are proprietary software programs
Appropriate personnel may include:	• supervisors • suppliers • clients • colleagues • managers
Equipment is to include:	• computers • CAD software programs
Communication may include:	• verbal and non-verbal language • constructive feedback • active listening • questioning to clarify and confirm understanding • use of positive, confident and cooperative language • use of language and concepts appropriate to individual social and cultural differences • control of tone of voice and body language
System variables may include:	variations in: • computer operating systems • versions of software used
Menus are to include:	• software program task bar options and pull down menus for various functions in a computer application
Drawing defaults	are standard or customised default settings previously set which the CAD system automatically applies during operation
Macros	are series of abbreviated instructions expanded automatically when required

RANGE STATEMENT

Entities are to include:

any single item created on the screen, such as:

- lines
- arcs
- circles
- text
- hatch
- dimensions

Attributes may include:

- properties associated with an entity

and include:

- layer or level
- line type
- line width
- colour and text

Detailed views may include:

- plan
- elevation
- section
- exploded views

Scale

is the ratio between units in a numerical system, such as 1:5, 1:10, 1:100 and so on, using standard construction drawing decimal scales

Files may include:

- IGES
- DXF
- HPGL

Materials lists

are various components determined by the drawing which need to be cut and prepared for the assembly process

Supplementary data may include:

- areas
- lengths
- angles
- perimeters

Records and reports may include:

- specified drawings
- product type and size
- quality outcomes

and may be:

- manual
- computer-based system
- other appropriate organisational

RANGE STATEMENT

communication system

Unit Sector(s)

Not Applicable

Competency field

Competency field Common Technical