Australian Government

Department of Education, Employment and Workplace Relations

LMFDN5001B Generate and transfer complex computer-aided drawings and specifications

Release: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the preparation of complex drawings using computer-aided techniques and capabilities, including three-dimensional modelling, exploded assembly drawings and conversion of drawings for CNC applications.

Application of the Unit

Application of the unit	

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

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. Create exploded assembly drawings	1.1. Drawing preparations, including drawing name, labelling information, dimensions, specifications and information management requirements are obtained/completed 1.2. Three-dimensional models are prepared for all components 1.3. Perspective view of the model is created and confirmed 1.4. Model is exploded so that all components are visible 1.5. All individual components are labelled in accordance with enterprise requirements 1.6. Quality checks are completed to ensure accuracy of outcomes 1.7. Drawings are stored in accordance with enterprise requirements
2. Create job sheets	2.1. Preparations, including file storage, product coding, inventory information and drawing management requirements are identified and completed 2.2. Job sheet template is set up in accordance with enterprise requirements and practices 2.3. Necessary orthographic views are created and dimensioned 2.4. Sequencing of machine operations and operator requirements are identified and listed 2.5. Draft job sheets are prepared, reviewed, tested and amended to enterprise requirements 2.6. Job sheets are stored in accordance with enterprise requirements
3. Convert drawings for CNC applications	3.1. Conversion requirements are identified and confirmed from the CNC machine specifications 3.2. Layers and additional information required for final conversion are created 3.3. Drawing entities are assigned to the relevant layers 3.4. Conversion to the required file type is completed 3.5. Converted file is stored in accordance with enterprise requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- research, collect, organise and understand information related to drawing and drafting, including the relevant technical, regulatory, cultural, environmental and safety requirements
- communicate ideas and information to enable clarification of the requirements, coordination of work and the reporting of work outcomes and problems
- plan and organise activities to avoid any back tracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to correctly complete measurements, calculate area and dimensions, create accurate and scaled drawings, and estimate material requirements
- create and apply systematic problem solving techniques to anticipate problems, avoid re-working and wastage
- use the workplace technology related to drawing and drafting, including calculators and measuring devices and computing/computer-aided systems

Required knowledge

- design core and professional practices
- ergonomic principles for furniture design and manufacture
- type, range, uses and limitations of contemporary computer-aided drafting software
- type, range, uses and limitations of contemporary cam applications
- the industry product range and detailed knowledge of furniture construction processes
- types of construction materials and their characteristics, uses and limitations
- materials, trims, accessories and their properties and characteristics
- enterprise information management systems and processes related to drawings
- relevant OHS legislation, regulatory requirements and codes of practice

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, the Range Statement and the Assessment Guidelines for the relevant Training Package.	

Critical aspects of evidence	• Locate, access and interpret all required information
	• Apply safety requirements throughout the work sequence, including the use of personal protective clothing and equipment
	• Create a minimum of two exploded assembly drawings, including:
	  • preparation of three-dimensional models
	  • creation of perspective views
	  • exploding the models to expose all components
	  • labelling of all components
	  • management and storage of drawings
	• Create a minimum of two confirmed job sheets which have the necessary orthographic views, and all required management and inventory information
	• Convert a minimum of two drawings for CNC application, including the creation of layers, assignment of drawing entities and the protection and storage of converted files
	• Work effectively with others

Resource implications	Access to real or appropriately simulated situations involving the application of drawing and drafting techniques and to the related computing, operational and inventory support systems This includes real or simulated concepts, work areas, materials, equipment and information on work specifications, customer requirements, organisation procedures, relevant safety procedures and regulations and quality standards
Method of assessment	Assessment methods must confirm consistency, or the potential for consistency, of performance over time and in a range of workplace relevant contexts. Assessment should be by direct observation of work and questioning on underpinning knowledge. Assessment may be conducted over time and in conjunction with assessment of other units of competency.
Context of assessment	Assessment may occur on the job or in a workplace

EVIDENCE GUIDE	
	simulated facility with relevant task requirements, work instructions and deadlines.

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 in the Performance Criteria is detailed below. Add any 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.	

Unit scope	• Work involves the identification, selection and use of computer-aided techniques and capabilities, including three-dimensional modelling, exploded assembly drawings and conversion of drawings for CNC applications
	• Activities may include:
	  • researching software trends and developments
	  • generating and presenting ideas
	  • liaising with client and/or other functional areas
	  • compiling information

Unit context	• OHS requirements include legislation, building codes, material safety management systems, hazardous substances and dangerous goods codes and safe operating procedures • Work is carried out in accordance with statutory requirements, organisation insurance requirements, OHS legislation, environmental legislation, manual handling procedures and relevant health regulations • Work requires individuals to demonstrate conceptual, analytical and organisational ability, judgement and problem solving skills
Workplace environment	• The competency can refer to enterprise and client initiated ideas or requests • The competency is applied under broad guidance within routine and non-routine situations
Information and procedures	• Customer requirements • Work specifications • Product catalogues and style manuals or equivalent • Inventory systems and records • Organisation work procedures and sequencing arrangements • Legislation/regulations/national and industry codes and practices relevant to the product • Quality and Australian standards and procedures

Unit Sector(s)

Unit sector	Furnishing Design

Co-requisite units

Co-requisite units	

Functional area

Functional area	