



Australian Government

Department of Education, Employment and Workplace Relations

LMFID5014A Use CAD applications to complete models and documentation for interior design projects

Release: 1

LMFID5014A Use CAD applications to complete models and documentation for interior design projects

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit specifies the outcomes required to use computer aided drafting (CAD) applications to produce models and documentation for interior decoration and design projects to meet client and project brief requirements.
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Application of the Unit

Application of the unit	This unit supports the attainment of skills and knowledge required for competent workplace performance in interior decoration and design operations of all sizes. It applies to the development of 2-D and 3-D drawings that incorporate all standard practice notations and drawing protocols. This unit requires employability skills in initiative and enterprise, planning and organising and problem solving in order to determine drawing specifications to meet design brief requirements. Communication skills are used to interpret and document design information and complete drawings. Self management and learning skills are applied to gain additional information to support drawing design skills.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine project requirements	1.1. Applicable OHS, legislative and organisational requirements relevant to designing with CAD applications are verified and complied with 1.2. Project brief is reviewed and confirmed 1.3. Parameters for the project are assessed and confirmed 1.4. Design concepts and details of design solution are examined to determine drawing requirements 1.5. Sketches, drawings and materials board are analysed 1.6. Calculations and measurements are confirmed 1.7. Documentation requirements for the design are clarified and confirmed 1.8. Computing equipment and suitable software is selected and prepared for use 1.9. Customised template created for individual workplace
2. Use CAD applications to produce 3D model and documentation	2.1. Layering strategy for project is designed, created and applied 2.2. Architectural library is developed to acquire relevant design components 2.3. Custom designed library parts are created 2.4. Text, line, font and dimension styles are applied 2.5. Pan, zoom and orbit tools are used to navigate in the 2-D and 3-D windows within the model 2.6. Text and notations are added to the drawing in accordance with drawing protocols 2.7. Dimensions are added to the drawing in accordance with drawing protocols 2.8. 3-D detailed suite of rooms, complete with fenestration and doors is produced on appropriate layers 2.9. Advanced features of drawing tools are used to generate 3-D form
3. Edit drawing components	3.1. Editing tools are used to modify drawing elements and text 3.2. Object properties are modified changed or transferred to a different layer
4. Render surfaces	4.1. Library is used to assign materials to surfaces and objects of the model 4.2. New material creations are explored 4.3. Texture, transparency, luminescence and patterns are edited to achieve desired surface effects using shader settings

ELEMENT	PERFORMANCE CRITERIA
	4.4. Light fixtures are included in model and parameters adjusted to achieve desired effects
5. Create 3-D views of the model	5.1. Isometric, two and three point perspective views are created using a range of camera settings and rendering techniques 5.2. Camera or target is repositioned to provide alternate views using a variety of camera techniques 5.3. Effect of natural and artificial lighting are created in 3-D space to achieve photo realistic awareness of the 3-D model and the effect of light on surfaces 5.4. Rendering time considerations are examined to achieve specific output
6. Plot and print for final presentations	6.1. Perspective views are saved and are appropriate for final media presentation 6.2. Appropriate views are saved to meet requirements of brief 6.3. Page layout is created for plotting and printing 6.4. Page layout is prepared using saved views and documentation 6.5. 2-D documentation is plotted with appropriate line weights 6.6. Slide show presentation is prepared using saved views and documentation
7. Save and back up files	7.1. Folders and files are created to store drawing projects 7.2. Drawings are saved and filed to allow easy access according to workplace documentation system 7.3. Appropriate techniques for reducing file size are identified and compared 7.4. Copies of files are backed up

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communicating ideas and information to enable confirmation of work requirements and specifications
- reading and interpreting workplace documents
- using mathematical ideas and techniques to correctly complete measurements, calculate area and volume, and estimate other material requirements
- applying attention to detail
- applying design concepts to drawings
- efficiently and safely contributing to innovative interior decoration and design processes
- planning own work within the given task parameters
- accepting responsibility for given tasks
- maintaining current knowledge of tools and materials
- maintaining current knowledge of interior decoration and design techniques
- using the workplace technology related to the use of tools including calculators, measuring and recording devices

Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice relevant to the full range of processes for using CAD applications
- organisational and site standards, requirements, policies and procedures for using CAD applications
- elements and principles of design
- types of CAD equipment and procedures for their safe use, operation and maintenance
- computer programs and CAD applications
- drafting and drawing codes and practices relevant to interior design
- 2-D and 3-D drawing techniques
- appropriate mathematical procedures for estimation and measurement
- documentation control procedures
- problem identification and resolution techniques

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

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

- Effectively design and produce at least two 2-D CAD drawings and two 3-D CAD drawings that document the requirements of the design brief
- Apply drafting and drawing protocols in accordance with Australian Standards and the Building Code of Australia
- Effectively apply design elements and principles to designing with CAD applications
- Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures to design with CAD applications
- Communicate effectively and work safely with others in the work area

Context of and specific resources for assessment

- The application of 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 essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements
- The following resources should be made available:
 - workplace location or simulated workplace
 - materials and equipment relevant to designing with CAD applications
 - specifications and work instructions

Method of assessment

- Assessment must satisfy the endorsed assessment guidelines of the Furnishing Industry Training Package
- Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge
- Assessment methods must be by direct observation of

EVIDENCE GUIDE	
	tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • 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
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.

OHS requirements

- are to be in accordance with Commonwealth, State or Territory legislation and regulations, organisational safety policies and procedures. Requirements may include but not be limited to the use of personal protective equipment and clothing, fire fighting equipment, first aid equipment, hazard and risk control and elimination of hazardous materials and substances, manual handling including lifting and carrying

Legislative requirements

- are to be in accordance with applicable legislation from all levels of government that affect organisational operation. Requirements may include but not be limited to 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 and heritage

Organisational requirements

- may include but not be limited to 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, ethical standards, recording and reporting, access and equity principles and practices, equipment use, maintenance and storage, environmental management (waste disposal, recycling and re-use guidelines)

Project brief

- may include but not be limited to client needs and objectives, client aims and objectives and criteria for evaluation, milestones for the design project, organisational or personal profiles and aims, image requirements and

RANGE STATEMENT	
	function, target market, budget, timeline and consultation requirements

RANGE STATEMENT	
Parameters	may include but not be limited to scope of brief, approval to make changes (legislative and planning), effect or feel trying to be achieved, functionality (short and long term), budget restrictions and established timelines
Details of design solution	may include but not be limited to products, materials, fixtures and finishes, dimensions, features, openings, furnishings and accessories, colour, effects and lighting and electrical sources
Documentation requirements	may include but not be limited to site plans, floor plans, sections, elevations, projections, general notes, construction notes, area analysis, services, structures, location, neighbouring buildings and any other space or area addressed by interior designers
Layering	may include but not be limited to the use of different overlays to portray a range of applications including architectural, civil, electrical, fire protection, general, landscaping, mechanical, plumbing, equipment or furnishings, structural and telecommunications
Architectural library	may include but not be limited to a catalogued reference of interior decoration and design components which can be uploaded into a model
Pan, zoom and orbit tools	may include but not be limited to procedures for moving around the window and the ability to look closer or more broadly at certain components
Drawing protocols	may include but not be limited to commonly used symbols, lettering standards, standard units of measurement, paper size, scale, numbering, legends and abbreviations
Editing tools	may include but not be limited to tools which enable changing of components, sections, text or measurements on a model
Rendering time considerations	may include but not be limited to global settings, quality settings and impact on rendering times, and specific rendering quality issues
Appropriate views	may include but not be limited to sectional views, internal and external elevations,

RANGE STATEMENT	
	removal of wire frames and hidden lines, and use of desired output settings

Unit Sector(s)

Unit sector	Interior decoration and design.
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		