Australian Government

Department of Education, Employment and Workplace Relations

LMFFDT4010A Produce and evaluate developmental furniture models to scale

Revision Number: 1

LMFFDT4010A Produce and evaluate developmental furniture models to scale

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit specifies the outcomes required to produce developmental models to scale using fundamental design elements and principles for presentation purposes.

Application of the Unit

Application of the unit	This unit supports the attainment of skills and knowledge required for competent workplace performance in furnishing operations of all sizes. The production of developmental models to scale applies to an industry workplace or design studio environment. These skills and knowledge are to be used within the scope of the individual's job and authority. This unit requires employability skills in initiative and enterprise, planning and organising and problem solving in order to produce and evaluate models. Communication skills are used to access and interpret work requirements. Self management is applied to ensure project requirements are met and technology is used to produce models.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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 required performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan for production	1.1. Applicable ***OHS***, ***legislative*** and ***organisational requirements*** relevant to producing developmental models to scale are verified and complied with 1.2. ***Design brief*** is reviewed, confirmed and clarified with ***appropriate personnel*** 1.3. Type and quantity of ***material*** to be used is acquired from the ***storage location*** 1.4. ***Equipment*** is selected appropriate to work requirements and checked for operational effectiveness in accordance with manufacturers recommendation 1.5. ***Communication*** with others is established and maintained in accordance with OHS requirements
2. Interpret design development sketches and drawings	2.1. ***Sketches*** and drawings are assessed for their ***elements of design*** 2.2. Sketches and drawings are assessed for their ***principles of design*** 2.3. Sample ***maquette*** is produced in accordance with the concept sketches and drawings 2.4. ***Concept*** is modified for its ***aesthetic*** value in keeping with the intended function 2.5. ***Working drawings*** are assessed for their specification requirements 2.6. Concept is planned for model manufacture taking into account available equipment and resources
3. Produce scale model	3.1. ***Manufacturing process*** is planned and organised 3.2. Material is processed in accordance with the manufacturing plan and safe working procedures 3.3. ***Components*** are produced and prepared for assembly 3.4. Components are assembled in accordance with the working drawings 3.5. ***Scale model*** is finished according to ***specifications***
4. Evaluate scale model	4.1. Design and production process faults are ***recorded and reported*** to the appropriate personnel 4.2. Scale model is evaluated for ***functionality*** and aesthetic appeal 4.3. Scale model is evaluated against design brief requirements 4.4. Scale model is reviewed with client or test client 4.5. ***Modifications*** to the scale model are explored to satisfy the requirements of the design brief

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- collect, organise and understand information related to work orders, basic plans and safety procedures
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, and the reporting of work outcomes and problems
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity
- use pre-checking and inspection techniques to anticipate custom furniture assembly problems to avoid re-work and wastage
- recognise and respond to circumstances outside instructions or personal competence
- plan and organise activities, including the preparation and layout of the worksite and the obtaining of equipment and materials to avoid any back tracking, work flow interruptions or wastage
- use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate other material requirements
- clarify and confirm work instructions
- plan work within given task parameters
- accept responsibility for given tasks
- set, monitor and satisfy personal work goals
- satisfy the competency requirements for the job
- maintain current knowledge of tools and materials
- maintain current knowledge of installation techniques
- seek learning opportunities
- use the limited workplace technology related to producing models, including tools, equipment, calculators and measuring devices.

Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice relevant to the full range of processes for producing developmental models to scale
- organisational and site standards, requirements, policies and procedures for producing developmental models to scale
- environmental protection requirements
- established communication channels and protocols
- problem identification and resolution
- elements and principles of design
- ergonomics and aesthetic values
- types of tools and equipment and procedures for their safe use, operation and maintenance

REQUIRED SKILLS AND KNOWLEDGE

- characteristics of materials, products and defects
- set up and operation of equipment
- computer programs
- product assembly techniques
- sketching and drawing
- scale drawings and scale to human figure
- storage systems and labelling
- procedures for the recording, reporting and maintenance of workplace records and information
- appropriate mathematical procedures for estimation and measurement.

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.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Effectively produce developmental models to scale work through sketch development and the design process to produce a final scale model • Effectively apply design elements and principles to design a scale model • Effectively produce a scale model in accordance with the scale development sketches and drawings • Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for producing developmental models to scale • 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 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 producing developmental models to scale
	  • 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 tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • Assessment may be applied under project related conditions

EVIDENCE GUIDE	
	(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 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.	
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)
Design 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 function, target market, budget, timeline and consultation requirements
Appropriate personnel	• may include but not be limited to trainers, supervisors, suppliers, clients, colleagues and managers
Material	• may include but not be limited to native timber (native and imported), man-made timber products, plastic, metal, alloys, stones, glass, textiles, fibreglass, foam, cardboard, paper products or any other manipulable substance
Storage locations	• may include but not be limited to storage racks, storage bays, bins, stacks, pallet boxes, modularised storage components,

RANGE STATEMENT	
	temporary stacking bays (stand, frame or ground) and may be divided into standard product classification, product designation, size, dimension, stack number, weight, grade, shelf life or stock rotation position

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Equipment	• may include but not be limited to static machinery, portable power tools and computer numerically controlled equipment • may also include procedures for lock out protecting operators and co-workers from accidental injury by isolating the machine from the power source
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
Sketches	• may include but not be limited to hand drawn images or ideation drawings completed freehand
Elements of design	• may include but not be limited to line, shape, form (geometric or organic), texture, colour, and function
Principles of design	• may include but not be limited to balance, proportion (symmetry, asymmetry), harmony, contrast, pattern, movement, rhythm, unity, style, focus, scale, dominant, sub dominant or subordinate relationship, emphasis, proximity, alignment, space, anthropometry, ergonomics, arrangement, workload, materials handling capacity, skills, control, equipment capabilities, aesthetic relations, tension and development methods
Maquette	• is to include a miniature version of the intended final product to establish if the elements and principles of design have been achieved. These are usually produced from cardboard or scrap timber
Concepts	• are to include ideas generated to respond to the design brief through both ideation drawings or sketching and written explanation
Aesthetics	• are to include the consideration of appeal to a large number of people; products are pleasing to the eye of many who view it
Working drawings	• may include but not be limited to drafted technical drawings or drawings produced on computer using computer aided drafting software packages. These usually contain project specifications
Manufacturing process	• may include but not be limited to the methods by which the product will be produced, these steps usually entail working from working drawings and specifications, producing components utilising machine operations, assembly of the components and finishing techniques
Components	• may include but not be limited to the parts which make up the

RANGE STATEMENT	
	whole of a product. Each component is often requires some level of machining to result in the desire part
Scale model	• is to include a model replica of the intended final outcome product produced to a suitable scale to distinguish its features, for example 1:5 or 1:10. The model may be made from similar material as the intended final solution or in some cases made from modelling clay
Specifications	• are to include the measurements, procedures by which a product is constructed and materials to be utilised
Functionality	• is to include the purpose intended for the product in relationship to the design brief
Records and reports	• may include but not be limited to the design and production method, product type, size, inspection and labelling outcomes, storage locations, quality outcomes, hazards, incidents or equipment malfunctions

Unit Sector(s)

Unit sector	Furniture design and technology.

Competency field

Competency field	

Co-requisite units

Co-requisite units		