



Australian Government

Department of Education, Employment and Workplace Relations

LMFFDT4005A Construct and evaluate furniture prototypes and samples

Revision Number: 1

LMFFDT4005A Construct and evaluate furniture prototypes and samples

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit specifies the outcomes required to construct or oversee the construction of furniture prototypes and samples.
------------------------	---

Application of the Unit

Application of the unit	<p>This unit supports the attainment of skills and knowledge required for competent workplace performance in furnishing operations of all sizes. Construction of prototypes and samples 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.</p> <p>This unit requires employability skills in initiative and enterprise, planning and organising and problem solving in order to construct prototypes and samples. 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 construct samples.</p>
--------------------------------	---

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 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 constructing prototypes and samples 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. Construct prototype or sample	2.1. Manufacturing process is planned and organised 2.2. Material is allocated in accordance with the manufacturing plan and safe working procedures 2.3. Components are selected 2.4. Assembly methods are researched and planned 2.5. Components are assembled in accordance with the sketches and freehand development drawings 2.6. Prototype or sample is finished according to draft specifications
3. Evaluate prototype or sample	3.1. Prototype or sample is evaluated for functionality and aesthetic appeal 3.2. Prototype or sample is assessed for their elements of design 3.3. Prototype or sample is assessed for their principles of design 3.4. Prototype is analysed against design brief requirements 3.5. Prototype is reviewed with client or test client 3.6. Modifications to the prototype or sample are explored to satisfy the requirements of the design brief 3.7. Prototype or sample production process faults are recorded and reported to the appropriate personnel

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 jointing 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 tools 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 jointing tools and materials
- maintain current knowledge of precision timber jointing techniques
- seek learning opportunities
- use the workplace technology related to the selection, preparation, operation and maintenance of hand and power tools including calculators and measuring devices
- apply knowledge of timber technology to optimise the selection and use of timber varieties.

Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice relevant to the full range of processes for the construction of prototypes and samples
- organisational and site standards, requirements, policies and procedures for constructing prototypes and samples
- environmental protection requirements
- established communication channels and protocols
- problem identification and resolution
- elements and principles of design
- ergonomics and aesthetic values

REQUIRED SKILLS AND KNOWLEDGE

- types of tools and equipment and procedures for their safe use, operation and maintenance
- characteristics of materials, products and defects
- set up and operation of equipment
- computer programs
- product assembly techniques
- sketching and drawing
- 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 construct a prototype or sample in accordance with the design brief and concept sketches and drawings
- Effectively apply design elements and principles to develop a prototype
- Effectively produce a prototype in accordance with a the design brief
- Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for constructing a prototype or sample
- 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 constructing a prototype or sample
 - 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	
	<p>(real or simulated) and require evidence of process</p> <ul style="list-style-type: none">• 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> is to include the aims, objectives, milestones for the design project, the point of reference for everyone, elements and principles of design and may include organisational or personal profiles, aims, target audience, budget, timeline, consultation requirements, colour requirements, image requirements and function
Appropriate personnel	<ul style="list-style-type: none"> may include but not be limited to trainers, supervisors, suppliers, clients, colleagues and managers
Material	<ul style="list-style-type: none"> may include but not be limited to scrap timber, man-made timber products, plastic, metal, alloys, stones, glass, textiles, fibreglass, foam, cardboard, paper products or any other manipulable substance

RANGE STATEMENT	
Storage locations	<ul style="list-style-type: none"> may include but not be limited to storage racks, storage bays, bins, stacks, pallet boxes, modularised storage components, 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
Equipment	<ul style="list-style-type: none"> may include but not be limited to static machinery, portable power tools and computer numerically controlled equipment is to include procedures for lock out protecting operators and co-workers from accidental injury by isolating the machine from the power source
Communication	<ul style="list-style-type: none"> 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
Manufacturing process	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> may include but not be limited to the parts which make up the whole of a product. Each component is often requires some level of machining to result in the desire part
Assembly process	<ul style="list-style-type: none"> may include but not be limited to nailing, gluing, screwing, welding, pressing, sewing, bonding, jointing or connecting various materials
Sketches	<ul style="list-style-type: none"> may include but not be limited to hand drawn images or ideation drawings completed freehand
Freehand development drawings	<ul style="list-style-type: none"> may include isometric, oblique, perspective, orthographic or elevation drawings which explode the parts of the concept sketches and include rough sizes, scale, tones and values
Prototype or sample	<ul style="list-style-type: none"> is usually a full size replica of the intended product outcome based on concept sketches and freehand development drawings, these are usually produced from stiff cardboard, scrap timber or possibly even moulding clay
Specifications	<ul style="list-style-type: none"> are to include the measurements, procedures by which a product is constructed and materials to be utilised
Functionality	<ul style="list-style-type: none"> is to include the purpose intended for the product in relationship to the design brief

RANGE STATEMENT	
Elements of design	<ul style="list-style-type: none"> may include but not be limited to line, shape, form (geometric or organic), texture, colour, and function
Principles of design	<ul style="list-style-type: none"> 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
Modifications	<ul style="list-style-type: none"> may include but not be limited to alterations to the original prototype concept to achieve better balance, proportion or aesthetic value
Records and reports	<ul style="list-style-type: none"> 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	