Australian Government

Department of Education, Employment and Workplace Relations

LMFFDT5001A Apply ergonomics, anthropometrics and proxemic considerations to a product

Release: 1

LMFFDT5001A Apply ergonomics, anthropometrics and proxemic considerations to a product

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit specifies the outcomes required to apply ergonomics, anthropometrics and proxemic considerations to a product applying integral design elements and principles, based on a given design brief.

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 application of ergonomics, anthropometrics and proxemic considerations to a product applies to an industry workplace or design studio environment and involves application of skills and knowledge at a para-professional level. These skills and knowledge are to be used within the scope of the individual's job and authority. This unit requires employability skills in communication and problem solving in order to analyse designs and complete documentation. Planning and organising and technology skills are applied in the application of information.

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 application	1.1. Applicable ***OHS***, ***legislative*** and ***organisational requirements relevant*** to applying ergonomics, anthropometrics and proxemic considerations to a product are verified and complied with 1.2. ***Design brief*** is reviewed, confirmed and clarified with ***appropriate personnel*** 1.3. ***Client*** requirements and desires are reviewed, confirmed and clarified 1.4. ***Communication*** with others is established and maintained 1.5. Problems or underlying factors to be addressed by the design brief are verified 1.6. ***Elements of design*** are diagnosed for the intended design brief 1.7. ***Principles of design*** are diagnosed for the intended design brief
2. Apply ergonomics, anthropometrics and proxemics	2.1. ***Concepts*** for the proposed solution to the design brief are reviewed for ergonomic, anthropometric and proxemic considerations 2.2. Human body functions are assessed in the context of solutions for possible problems in supporting bodies of all shapes and sizes 2.3. ***Ergonomic*** factors of a design are interrogated and refined 2.4. ***Anthropometric*** factors of a design are interrogated and refined 2.5. ***Proxemic*** considerations of a design are interrogated and reviewed 2.6. Sample ***maquette*** and ***prototype*** are reviewed in accordance with ergonomics, anthropometrics and proxemics 2.7. Different solutions to satisfy the requirements of the design brief are explored and reviewed 2.8. Final ***working drawings*** in full scale are developed to test the ergonomic values of a design 2.9. ***Specifications*** are reviewed and compiled in readiness for production 2.10. Concept is planned for ***manufacture*** taking into account available equipment, resources, production sequences, schedules and timelines

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

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

Required skills

- collect, organise and understand information related to furniture design
- communicate ideas and information
- prepare documentation
- work with others and in a team to evaluate design features
- recognise and respond to circumstances outside instructions or personal competence
- use mathematical ideas and techniques to correctly complete assess designs
- accept responsibility for given tasks
- set, monitor and satisfy personal work goals
- satisfy the competency requirements for the job
- maintain current knowledge of ergonomics, anthropometrics and proxemic considerations
- maintain current knowledge of assessment methods
- seek learning opportunities
- use the workplace technology related to the electronic communication with colleagues and clients as well as documenting and presenting information.

Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice relevant to the full range of processes for applying ergonomics, anthropometrics and proxemic considerations to a product
- organisational and site standards, requirements, policies and procedures for applying ergonomics, anthropometrics and proxemic considerations to a product
- elements and principles of design
- ergonomics, anthropometrics, proxemics and aesthetic values
- human body functions
- 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 machining, assembly and finishing techniques
- sketching and drawing
- storage systems and labelling
- Australian Standards for product design
- procedures for the recording, reporting and maintenance of workplace records and information
- appropriate mathematical procedures for estimation and measurement
- environmental protection requirements

REQUIRED KNOWLEDGE AND SKILLS

- established communication channels and protocols
- problem identification and resolution.

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 RangeStatement 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 work through the application of ergonomics, anthropometrics and proxemic considerations to a enhance a product for a design brief • Effectively apply design elements and principles to the application of ergonomics, anthropometrics and proxemic considerations to a product • Effectively applying ergonomics, anthropometrics and proxemic considerations to a product in accordance with a design brief • Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for applying ergonomics, anthropometrics and proxemic considerations to a product • 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 applying ergonomics, anthropometrics and proxemic considerations to a product
	  • 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

EVIDENCE GUIDE	
	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 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
Client	• may include but not be limited to suppliers, manufacturers, private clients, colleagues, retailers or the public
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

RANGE STATEMENT	
	individual social and cultural differences, control of tone of voice and body language
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
Concepts	• are to include ideas generated to respond to the design brief through both ideation drawings or sketching and written explanation
Ergonomics	• are to include the study of the efficiency of persons in their working environment
Anthropometrics	• are to include the scientific study of the measurements of the human body
Proxemics	• are to include the study of socially conditioned spatial factors in ordinary human relations
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
Prototype	• is usually a full size replica of the intended product outcome based on concept sketches and free hand development drawings, these are usually produced from stiff cardboard, scrap timber or possibly even moulding clay
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
Specifications	• are to include the measurements, procedures by which a product is constructed and materials to be utilised
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

Unit Sector(s)

Unit sector	Furniture design and technology.

Competency field

Competency field	

Co-requisite units

Co-requisite units		