



Australian Government

Department of Education, Employment and Workplace Relations

LMTTD5004A Design and produce experimental textiles

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor This unit covers the skills and knowledge required to apply experimental processes to design and produce original textiles.

Application of the Unit

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The unit applies to the development of creative and original design concepts using manipulation techniques to create different effects on fibres, fabrics and other materials used in the production of products such as garments, accessories, interior and exterior applications, commissioned objects, and

2-D and 3-D functional and non-functional objects. A design brief may be of one's own determination or specified by a trainer or supervisor and may be applied to a particular context within the textile industry. The design and subsequent calculations and pattern development may be created manually or by using computer aided design programs.

Work may be conducted in small to large scale enterprises and may involve individual and team-related activities.

The application of this unit is according to OHS practices of the enterprise and workplace practices, which may include:

- requirements prescribed by legislation, awards agreements and conditions of employment
- standard operating procedures
- work instructions
- oral, written and visual communication
- quality practices, including responsibility for maintenance of own work quality and contribution to quality improvement of team or section output
- housekeeping
- tasks related to environmental protection, waste disposal, pollution control, and recycling

This unit requires the application of skills associated with communication and initiative and enterprise associated with research, present design concepts and develop patterns and specifications. Initiative and enterprise and problem solving will be used to develop the product design. Planning and organising for the safe and effective use of experimental textile technology and operations and an ability to check the quality of outcomes and identify and address problems relating to production or textile product are also required.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop original textile product design	<p>1.1 Requirements or parametres for design are identified and analysed</p> <p>1.2 Research is conducted to generate design ideas</p> <p>1.3 Ideas are explored using computer aided or other design tools and design concepts are developed and reviewed against requirements and with consideration of application, principles of design and elements of design</p> <p>1.4 Design concept is selected and communication tools are used to present design concept to appropriate personnel for feedback.</p> <p>1.5 Feedback is received and considered in line with design concepts</p> <p>1.6 Design concept is modified and improved where possible.</p>
2. Select, develop and plan manipulation process	<p>2.1 Appropriate materials and manipulation techniques to achieve desired effect are selected and materials are sourced.</p> <p>2.2 Processes used to achieve different manipulations are described and technical aspects of production are identified</p> <p>2.3 Specification sheet is completed to guide production</p> <p>2.4 Calculations are undertaken as required to determine textile and material quantities</p> <p>2.5 Tools and equipment required for production are selected and prepared.</p>
3. Manipulate materials to produce experimental samples	<p>3.1 Workstation is set up according to specifications for work.</p> <p>3.2 Textiles and materials to be manipulated are checked against quality standards.</p> <p>3.2 Two and three-dimensional manipulation techniques are undertaken to achieve design effects for sample and according to OHS practices.</p> <p>3.4 Material or process faults are identified and probably cause determined and addressed</p>
4. Evaluate design and production processes.	<p>4.1 Manipulated textile sample is assessed against design concept and specifications.</p> <p>4.2 Design is analysed and evaluated to identify opportunities for improvement.</p> <p>4.3 Manipulation techniques are evaluated to identify opportunities for improvement.</p> <p>4.4 Modifications to design or process are explored using CAD or other design tools and communicated with appropriate personnel</p> <p>4.5 Modifications and design are finalised and all processes and improvements are documented.</p>

Required Skills and Knowledge

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

Demonstrates knowledge of

- uses and performance characteristics of fibres, fabrics and other materials
- role of manipulation as a production tool
- effect of manipulation on textiles and materials
- effects of manipulation on design
- information resources on fibres, fabrics and other materials
- OHS practices, including hazard identification and control measures
- quality practices
- workplace practices
- recording and reporting practices

Demonstrates skills to:

- uses manipulation to inform and inspire design
- analyse performance characteristics
- use tools and equipment associated with manipulating fabrics and other materials
- read, interpret and follow information on work specifications, standard operating procedures and work instructions, and other reference material
- maintain accurate records
- communicate within the workplace
- sequence operations
- meet specifications
- clarify and check task-related information
- carry out work according to OHS practices
- control design elements
- resolve design and production problems

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 Training Package.

Critical aspects of evidence to be considered	<p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • analyse design requirements or parameters • apply design processes to development of design • determine effects of manipulating textiles and other materials • identify effects of manipulation techniques on design elements • communicate design concepts • determine production requirements • apply manipulation techniques to production of samples • evaluate and modify design and manipulation process
Consistency in performance	<p>Consistently applies skills and knowledge when:</p> <ul style="list-style-type: none"> • organising work • completing tasks • identifying improvements • using workplace practices • using OHS practices • recording and reporting accidents and incidents • assessing operational readiness of equipment used and work processes • recognising and adapting to cultural differences in the workplace, including modes of behaviour and interactions • completing work systematically with attention to detail without damage to goods and equipment
Resource implications	<p>Access is required to real or appropriately simulated situations, including varying indoor and outdoor work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Context for assessment	<p>Assessment may occur on the job or in an appropriately simulated environment.</p>
Interdependent assessment	<p>This unit may be assessed independently or in combination with other relevant units.</p>

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. 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.

Legislative/regulatory requirements	All work must comply with relevant Federal and State or Territory legislative or regulatory requirements.
Requirements or parameters may include	<ul style="list-style-type: none"> • purpose • design specifications such as colour, yarn type, size, patterns etc • quality standards • budget • timeline • pattern or images • reproducibility • uniqueness
Research may include	<ul style="list-style-type: none"> • library • internet • journals • articles • visits to galleries and museums • technical files • visual diary work
Design tools may include	<ul style="list-style-type: none"> • sketches • illustrations • models • samples • fibres and fabrics
Applications may include	<ul style="list-style-type: none"> • wearable products • accessories • domestic textile products • giftware • small and large scale interior/exterior applications • public art pieces • commissions • conceptual pieces for exhibition
Principles of design may include	<ul style="list-style-type: none"> • repetition • pattern • gradation

- rhythm
 - radiation
 - harmony
 - contrast
 - dominance
 - proportion
 - balance
 - unity
 - line
 - shape or silhouette
 - colour
 - texture
 - value
- Elements of design may include
- knitted fabrics, including knit weave and patterned knits, warp knits and weft knits
 - woven fabrics, including plain, twill, satin, dobby and jacquard
 - non-woven textiles such as felts, nets, braids, bonded, paper, cardboard
 - raw materials
 - yarns
 - man-made materials
 - recycled materials
- Materials may include
- inspiration boards
 - story board
 - design concepts
 - research information
 - multimedia tools
 - materials samples
 - colour chips
 - sketches and drawings
 - verbal presentation
 - inspiration journal or visual diary
- Communication tools may include
- clients
 - supervisor
 - trainer or mentor
 - designers
 - production supervisors
 - colleagues and other workers
 - curators
 - gallery owners
 - architects
 - interior designers
- Appropriate personnel may include

- Tools and equipment may include
- screens
 - squeegees
 - exposure unit
 - printing tables or work tables
 - chairs
 - dye pots - hot and cold
 - hot plates
 - access to wet areas
 - shibori poles
 - needle and thread
 - cutting mats and rules
 - knives, secateurs and other cutters
 - power tools
 - hand tools
 - looms and frames
 - knitting machines and accessories
 - linker
 - overlocker
 - sewing machine
 - iron
 - ironing board
 - printing press
 - mounting and display equipment
- Experimental samples may include
- 2D and 3D explorations
 - materials explorations
 - finishing techniques
- Manipulation techniques may include
- crushing
 - heat application
 - tucking
 - pleating
 - shrinking
 - dyeing
 - off loom weaving
 - weaving on made frames
 - painted and printed warps
 - tie dye techniques
 - sculptural techniques
 - beading
 - embroidery
 - macramé
 - crochet
 - folding

- cutting
- reconstruction
- assemblage
- knotting
- looping
- felt making
- basket making
- papermaking
- bookmaking

OHS practices

OHS practices must include hazard identification and control, risk assessment and implementation of risk reduction measures specific to the tasks described by this unit and may include:

- manual handling techniques
- standard operating procedures
- personal protective equipment
- safe materials handling
- taking of rest breaks
- ergonomic arrangement of workplaces
- following marked walkways
- safe storage of equipment
- housekeeping
- reporting accidents and incidents
- other OHS practices relevant to the job and enterprise

Analysed and evaluated may include consideration of

- skill and efficiency
- variation of manipulation effects
- quality
- suitability of materials

Unit Sector(s)**Sector**

Textile Design and Development