



Australian Government

Department of Education, Employment and Workplace Relations

LMTTD5003A Design and produce woven products

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor This unit covers the skills and knowledge required to develop designs and produce woven products to meet a specified design brief.

Application of the Unit

Application of the Unit

This unit applies to the interpretation and analysis of a design brief and development of a design for woven products such as garments, textile products or accessories, and fabrics.

Production of the product is required to meet design specifications and may include use of a wide range of yarn types. The design brief may be determined by a trainer or supervisor and may be applied to a particular context within the textile industry. The design brief includes specifications for the woven product. The design and subsequent calculations and analyses may be undertaken manually or by using Computer Aided Design (CAD) 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 communicating information on weaving design, production and process improvements as well as performing calculations on yarn quantities. Initiative and enterprise and problem solving will be used to develop the product design. This unit also requires skills associated with planning and organising for the safe and effective use of weaving technology and operations. It requires an ability to check the quality of outcomes and identify and address problems relating to production or weaving fault.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites LMTTD4003A

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
1 Develop woven product design	1.1 Design requirements and specifications are interpreted from brief and elements of design are analysed. 1.2 Design is developed to meet design brief and in line with principles of design and product purpose. 1.3 Communication tools are used to present woven design for feedback. 1.4 Feedback is received and design adjusted accordingly. 1.5 Design is confirmed for production.
2 Plan production of woven design sample	2.1 Technical aspects of production are identified. 2.2 Specification sheet is completed to guide production. 2.3 Calculations are undertaken to determine yarn quantities and pattern developed to achieve specifications. 2.4 Materials, tools and equipment required for production are selected and prepared.
3 Produce woven design sample	3.1 Workstation, tools and equipment are set up according to specifications for work. 3.2 Yarns to be woven are checked against quality standards. 3.3 Weaving techniques are undertaken to meet design specifications for sample and according to OHS practices. 3.4 Woven sample is checked to ensure quality standards are met including testing for accuracy of pattern repeat, colour or placement, and yarn suitability.
4 Evaluate design and production processes	4.1 Woven sample is assessed against design specifications, pattern and design brief. 4.2 Weaving faults are identified and design or production problems recognized. 4.3 Design is analysed and evaluated to identify opportunities for improvement. 4.4 Production process is evaluated to identify opportunities for improvement. 4.5 Process and improvements are documented.

Required Skills and Knowledge

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

Demonstrates knowledge of:

- principles and elements of design
- characteristics of yarns
- information resources on fibres and fabrics
- CAD applications
- weaving modification techniques
- weaving loom techniques
- typical fault conditions
- fault-finding procedures
- types and styles of knitted fabrics
- simple equipment maintenance techniques
- OHS practices, including hazard identification and control measures
- quality practices
- workplace practices
- recording and reporting practices

Demonstrates skills to:

- interpret a design brief
- address design and production problems
- identify fabric characteristics
- test accuracy of weaving pattern
- use weaving looms and equipment associated
- 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

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	Demonstrates skills and knowledge to: • analyse and interpret design brief • apply design processes to development of design • communicate design concepts • evaluate and modify designs • determine production requirements • produce woven design product
Consistency in performance	Consistently applies skills and knowledge when: • 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 and without damage to goods and equipment
Resource implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Context for assessment	Assessment may occur on the job or in an appropriately simulated environment.
Interdependent assessment	This unit may be assessed independently or in combination with other relevant units.

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.
Products may include	• garments • textile products • fabrics • home furnishings • accessories, eg scarves, bags • jacquard fabrics
Elements of design may include	• line • shape • colour • texture • value
Principles of design may include	• repetition • pattern • gradation • rhythm • radiation • harmony • contrast • dominance • proportion • balance • unity
Communication tools may include	• inspiration board • storyboard • design concepts • research information • multimedia tools • yarn samples • colour chips • colour and fashion forecasting references • illustrations

Technical aspects may include	• production sketches • balance and set requirements • density requirements • ends per inch • total number of ends • number of shafts required • number of weft colours used • number of warp colours used • conversion to peg plan
Specification sheets may include	• budget • type of product • style requirements • yarns • fibres • colours • weaving technique • application • timeline • design restrictions or conditions • yarn costs • weight and drape of fabric • colour ways • fashion trends
Yarns may include	• singles yarns • plied yarns: • wool • cotton • silk • novelty • synthetics • metallics • unspun fleece • rovings • rag strips • hand spun • ribbon • silk tops • nylon filament
Sample may include	• complete woven product • sample weave
Tools and equipment	• six and eight shaft loom

may include	• warping mills • fly shuttles. • double beam looms • jacquard looms • dobby looms • counter marche looms • draw looms • CAD equipment
Weaving techniques may include	• plain weave • twill weave • satin or sateen weave • double weaves • brocade weaves • warp faced weaves • weft faced weaves
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
Weaving faults may include	• incorrect warp tension • broken warp threads • incorrect beating of weft • incorrect threading, tie-up, treadling of design • incorrect use of materials • incorrect use of equipment • holes • foreign matter • creasing • lines • runs
Analysed and	• skill and efficiency

- evaluated may include consideration of
- variation of warp treatments
 - variation treadlings
 - compatibility of finishing procedures to design function
 - quality
 - suitability of materials

Unit Sector(s)

Sector Textile Design and Development