



Australian Government

MSTGN4002 Participate in product engineering

Release: 1

MSTGN4002 Participate in product engineering

Modification History

Release 1. Supersedes and is equivalent to LMTGN4002A Participate in product engineering

Application

This unit of competency covers the skills and knowledge required to participate in product engineering in a textiles, clothing and footwear (TCF) enterprise.

This unit of competency applies to product engineering in any TCF sector where judgement may be required in planning and selecting appropriate processes or procedures for self and others.

Work may be conducted in a variety of environments, including operational workplace activities, restricted space, and hazardous, controlled or exposed conditions.

Product engineering may occur in relation to repetitive production runs, short runs and quick changes and can relate to products including fabrics, fibres, yarns, design varieties, weaves, dyes and finishes.

This unit of competency is applicable to all sectors of the TCF industry.

Work may be conducted in small to large scale enterprises and may involve individual and team activities. Work is performed within defined procedures under direct supervision.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Generic

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | |
|-------------------------------------|------------|---|
| 1 Determine job requirements | 1.1 | Follow standard operating procedures (SOPs) |
| | 1.2 | Comply with work health and safety (WHS) |

		requirements at all times
	1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
	1.4	Identify job requirements from specifications, drawings, job sheets or work instructions
2	Prepare for production	2.1 Examine structure of sample material or product from identified TCF sector to confirm structure 2.2 Document detail of structure or composition, where required, to assist in production planning 2.3 Evaluate material or product structure to identify options for production
3	Plan method of production	3.1 Assess options to determine most effective and efficient method of production, to ensure highest quality and yield from raw materials, and ease of production 3.2 Document options and recommendations in accordance with workplace procedures 3.3 Examine existing resources, machines, production techniques and scheduling arrangements in relation to the production requirements 3.4 Identify and document any potential requirements for change in accordance with workplace procedures
4	Prepare cost estimates and maintain records	4.1 Identify material requirements and economical batch sizes 4.2 Identify labour hours, times and other statistics required and make cost estimates 4.3 Determine available machine hours and make estimates, where required 4.4 Estimate and document overall costs in accordance with workplace practices 4.5 Maintain production planning records and prepare

reports, where necessary, in accordance with workplace procedures

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Workplace procedures include one or more of the following:

- requirements prescribed by legislation, awards, agreements and conditions of employment
- SOPs
- 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
- WHS practices

Australian Standards includes:

- the relevant industry or Australian Standards that are current at the time this unit is being undertaken

TCF sectors include, but are not limited to, one or more of the following:

- textile production
- clothing production
- footwear
- cotton ginning
- leather production
- millinery
- canvas and sails production
- laundry operations
- dry cleaning operations

- fashion design and technology

Methods of production include, but are not limited to, two or more of the following:

- just in time (JIT)
- value-added modelling (VAM)
- quick response
- quality circles
- team processes
- benchmarking

Cost estimating includes, but is not limited to:

- written bill of labour, order of work or plant sample

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a203ec5c-de7d-406b-b3e1-8f1a9b76e92e>

Assessment Requirements for MSTGN4002 Participate in product engineering

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria, and include:

- reading and following work instructions, standard operating procedures (SOPs), safe work practices
- applying relevant standards
- confirming specifications
- determining structure and composition of material or product
- making calculations, interpreting and using data from various sources
- assessing options for method of production
- establishing potential machine and production changes
- identifying material requirements, economical batch sizes, labour hours, times and other statistics required, and making cost estimates
- determining available machine hours, making estimates, where required, and estimating costs
- maintaining production planning records and preparing reports, where necessary, in accordance with workplace procedures.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- relevant Australian Standards
- machines and their capabilities
- quality assurance processes; production processes and software
- costing procedures for:
 - materials
 - economical batch hours
 - labour
 - machine hours
 - other statistics
- methods of production
- products produced by the workplace and material or fabric structure (techniques)
- work and workplace organisation systems

- quality practices
- workplace procedures
- recording and reporting practices.

Assessment Conditions

- Assessors must:
 - satisfy the assessor competency requirements that are in place at the time of the assessment, as set by the VET regulator
 - have vocational competency in participating in product engineering, at least to the level being assessed, with relevant industry knowledge and experience.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit
- The unit is applicable to all TCF sectors and assessment must ensure it is delivered to suit the industry it is being applied to.

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