



Australian Government

MSS405075A Facilitate the development of a new product

Release 2

MSS405075A Facilitate the development of a new product

Modification History

Release 2 - Content error in Range and Evidence Guide corrected. Prerequisite unit code corrected - MSS404052A

Release 1 - New unit, superseding MSACMT675A Facilitate the development of a new product* - Equivalent

* New prerequisite *MSS404052A Apply statistics to operational processes* superseding MSACMT452A Apply statistics to processes in manufacturing

Unit Descriptor

This unit of competency covers the skills and knowledge required to facilitate the development of a new or evolutionary product within an existing range of products and encompasses design for manufacture, determining the process capability and the facilitation of its initial production.

Application of the Unit

This competency applies to an individual responsible for the development of a new product. The unit assumes an initial product design has been prepared by a designer and also assumes a working knowledge of all main processes and materials so that an informed choice can be made between them. The person will normally be a manager or technical expert and be required to work closely with a range of other management and operations personnel. The unit requires balancing the business and technical sides of the new product and would typically be done as part of a cross-functional team. This unit primarily requires the application of skills associated with communication in gathering, analysing and applying information and consulting with stakeholders. Teamwork, problem solving, initiative and enterprise, and planning and organising are required to facilitate the development of a new product. This unit also requires aspects of self-management and learning to ensure feedback and new learning is integrated into competitive systems and practices.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MSS404052A Apply statistics to operational processes

Employability Skills Information

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 performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

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| 1 | Confirm design brief of new product in consultation with relevant people | 1.1 | Review product design with customer and other key stakeholders and agree on technical specification, aesthetic requirements, timelines, cost and other market requirements |
| | | 1.2 | Determine any regulatory, industry code/intellectual property requirements for product |
| | | 1.3 | Identify any required tooling, process or equipment needs |
| | | 1.4 | Confirm design brief, including relevant drawings, to meet needs |
| | | 1.5 | Determine design brief conforms to organisation objectives and capability |
| | | 1.6 | Obtain approval on total design brief from all relevant personnel |

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| 2 | Determine material requirements for product | 2.1 | Select appropriate materials or combination of materials/components in liaison with key stakeholders |
| | | 2.2 | Determine material/component testing and evaluation regime required to meet product end use requirements, including regulatory/industry code requirements |
| | | 2.3 | Arrange for testing and evaluation of trial materials/components |
| | | 2.4 | Guide material trial process and interpret material trial results |
| | | 2.5 | Determine final materials/components specifications and details of value chain |
| 3 | Determine process requirements for product | 3.1 | Select appropriate process to make product in liaison with key stakeholders and based on relevant factors |
| | | 3.2 | Determine any special process/equipment requirements for this product |
| | | 3.3 | Communicate with production personnel to determine any concerns and/or training or other needs |
| | | 3.4 | Adjust the design, as required, to satisfy customer and production needs |
| 4 | Ensure process needs for new product have been met | 4.1 | Liaise with equipment design/procurement personnel |
| | | 4.2 | Interpret hardware specifications and ensure they are appropriate for the job required |
| | | 4.3 | Liaise with process personnel to ensure appropriate draft procedures for new product have been developed |
| | | 4.4 | Validate product cost and design meets organisation requirements and capability |
| 5 | Trial new product through the process | 5.1 | Design trialing procedure to deliver required information |
| | | 5.2 | Liaise with relevant stakeholders |
| | | 5.3 | Ensure health safety and environment (HSE) |

- requirements are observed
- 5.4 Coordinate the trialling of the new product
 - 5.5 Interpret product trial results and guide product trial process
 - 5.6 Tune process to optimise production of new product
- 6 Determine process capability
- 6.1 Plot appropriate statistical process control charts
 - 6.2 Determine confidence limits
 - 6.3 Compare confidence limits with product specification
- 7 Coordinate product trials
- 7.1 Determine product testing and evaluation regime required to meet end use requirements, including regulatory/industry code requirements
 - 7.2 Arrange for testing and evaluation of trial product/prototype
 - 7.3 Interpret product trial results and guide product trial process
 - 7.4 Determine final product specification in liaison with key stakeholders
 - 7.5 Make required changes to materials, process and equipment
- 8 Implement standard procedures for new product
- 8.1 Monitor initial production and, in liaison with appropriate team members, adjust process, conditions and materials to ensure the product and process outcomes conform to customer, regulatory and organisation requirements
 - 8.2 Ensure process specifications are updated and reflect the optimised operation developed
 - 8.3 Ensure standard operating procedures are correct for the new product
 - 8.4 Ensure equipment and other hardware records are updated to reflect additions/changes

- 8.5 Ensure project records are complete and all required reports have been completed and submitted
- 8.6 Archive records according to company procedure

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- selecting and justifying the selection of:
 - type of material/material specification
 - appropriate process for a range of product/market applications
 - material and product testing procedures
- applying theoretical principles to predict:
 - properties of product based on materials selected
- identifying effects of processes and processing on the final properties of the product mathematically determine:
 - product cost estimates
 - process time
 - cost/benefit to organisation of new product
- communicating at all levels in the organisation and value stream and to audiences of different levels of literacy and numeracy
- interpreting and making recommendations based on:
 - field test results
 - market analysis data
 - trialling data
 - organisation objectives and business plan
 - equipment and operations capacity

Required knowledge

Required knowledge includes:

- materials, equipment and process sufficient to choose an appropriate combination of materials and process to achieve the end use function of the product
- enterprise procedures and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and work standards

Evidence Guide

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| <p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p> | |
| <p>Overview of assessment</p> | |
| <p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p> | <p>A person who demonstrates competency in this unit must be able to provide evidence of their ability to:</p> <ul style="list-style-type: none"> • ensure the development of a new product meets general organisation guidelines and objectives • liaise with the required people • optimise the process for the new product at the completion of the development phase • assess materials and components characteristics required in a design including material grades and properties and the effects of processing on materials and components • use trial outcomes to determine standard procedures for manufacture and/or operation of new product. |
| <p>Context of and specific resources for assessment</p> | <p>Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices.</p> <p>Access may be required to:</p> <ul style="list-style-type: none"> • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies. |
| <p>Method of assessment</p> | <p>A holistic approach should be taken to the assessment.</p> <p>Competence in this unit may be assessed by using a combination of the following to generate evidence:</p> <ul style="list-style-type: none"> • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning |

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| | <ul style="list-style-type: none"> • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. <p>In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge.</p> <p>Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.</p> |
| Guidance information for assessment | <p>Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.</p> |

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. 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) may also be included.

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| <p>Competitive systems and practices</p> | <p>Competitive systems and practices may include, but are not limited to:</p> <ul style="list-style-type: none"> • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree <p>Competitive systems and practices should be interpreted so as to take into account:</p> <ul style="list-style-type: none"> • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector |
| <p>Organisation objectives and</p> | <p>Organisation objectives and requirements may include:</p> |

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| requirements | <ul style="list-style-type: none"> • Board or management guidelines on: <ul style="list-style-type: none"> • cost/profit requirements for new products (e.g. minimum return and capital expenditure limits) • encouragement/discouragement of different types of products (e.g. on sustainability, ethical or other non-individual customer related criteria) • potential or actual capacity conflicts with other customers or product/process activities • activities that require/may require community consultation (e.g. on noise or other environmental grounds) |
| Tools and equipment | <p>Tools and equipment may include:</p> <ul style="list-style-type: none"> • understanding of use of all standard processing equipment • relevant personal protective equipment |
| Typical regulatory requirements | <p>Typical regulatory requirements may include:</p> <ul style="list-style-type: none"> • occupational health and safety (OHS) • environmental regulations • structural codes • product/industry specific requirements |
| Typical problems | <p>Typical problems may include:</p> <ul style="list-style-type: none"> • defining product end-use requirements in terms meaningful to the product design and manufacture • matching suitable materials and processes to the product needs and company expertise and facilities • matching (and improving) process capability to product tolerances |
| Relevant factors | <p>Relevant factors may include:</p> <ul style="list-style-type: none"> • type of material • dimensional precision of product • length of run/number of products • required aesthetics • size and complexity of product • available capital funding • process equipment available • HSE factors |

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.