



Australian Government

MSFFDM4019 Research and select manufacturing technologies

Release: 1

MSFFDM4019 Research and select manufacturing technologies

Modification History

Release 1. Supersedes and is not equivalent to MSFFDT5008 Research and recommend alternative manufacturing processes and MSFFDT5009 Research and recommend machine technology.

Application

This unit describes the skills and knowledge required to determine production considerations and then to investigate and select a manufacturing technology that is suitable for the design concept.

This unit applies to individuals working in a manufacturing or design studio environment. They analyse and compare technical information from a wide range of sources to develop a design solution.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Competency Field

Furniture design and manufacturing – general

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine production considerations	1.1 Identify and collate information about project brief and initial design concepts 1.2 Review information and establish production parameters and constraints 1.3 Identify all those involved in the production process and seek input on key considerations for selecting manufacturing technology 1.4 Establish key technical parameters for selection of manufacturing technology
2. Investigate potential manufacturing technologies	2.1 Identify and assess information sources on potential technologies 2.2 Assess feasibility of technologies in context of design concept and overall design brief 2.3 Identify and interrogate how manufacturing process and its technical

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	application may impact eventual outcome 2.4 Identify sustainability and safety aspects of technologies and assess implications for use 2.5 Source and compare information about costs and technology access against project brief
3. Refine ideas and select solution	3.1 Explore and refine ideas about technologies through process of reflection and testing 3.2 Test compatibility of manufacturing technologies with design concept and adapt approaches 3.3 Choose manufacturing technology solution that works with proposed design solution and make it integral to ongoing design process 3.4 Provide clear and relevant rationale for technology chosen

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in performance criteria.

- Numeracy skills to interpret technical information.
- Reading skills to interpret research information and design briefs.
- Writing skills to record and report on manufacturing technologies research and document solutions.

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

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFDM4019 Research and select manufacturing technologies

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- research and select manufacturing technologies and their application to three different design briefs, which individually or cumulatively involve at least two types of manufacturing technologies.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- how the selection of the manufacturing technology sits within the overall design and production process
- information needed to inform technology selection
- roles and responsibilities of those involved in decisions about selection of manufacturing technologies
- types of technical parameters that need to be considered and the nature of the relationship between the design concept and manufacturing technologies
- sources of information on manufacturing technologies
- key features, costs, efficiencies and technical application of current and emerging technologies, including:
 - CNC operations
 - 3D printing
 - foundries and casting
 - robotics
 - laser cutting
 - water-jet cutting
- how to structure and present information and recommendations.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - design briefs and associated concepts
 - information technology for research and presentation.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors

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