



**Australian Government**

**MEM234020 Coordinate small lot  
manufacture using rapid manufacture  
processes**

**Release: 1**

# **MEM234020 Coordinate small lot manufacture using rapid manufacture processes**

## **Modification History**

Release 1. Supersedes and is equivalent to MEM234020A Coordinate small lot manufacture using rapid manufacture processes.

## **Application**

This unit of competency defines the skills and knowledge required to coordinate rapid manufacture (RM), rapid prototyping (RP) and rapid tooling (RT) processes for single or small lot production and includes choice of materials, machinery and processes, plus generation of data and post-processing.

RM applications include products requiring a high degree of customisation and/or where speed to market is critical. Examples are medical and dental prosthetics and implants, customised components for automotive, aerospace, marine and general product manufacture, jewellery and other art objects or any small to medium quantity item, particularly involving high set-up cost associated with using alternative or traditional methods.

RP applications include concept modelling and multiple design iterations at low cost and form, fit and function testing prior to committing to expensive tooling. RT applications can include tooling for most RM components and both 'direct' and 'indirect' methods can be used to produce the tool.

It applies to the RM of components or prototypes across all forms of manufacturing and engineering and is suitable for manufacturing maintenance technicians, component and tool designers, and for those pursuing engineering or related qualifications and careers.

Individuals completing this work either already have or are developing skills and experience in the application of computer-aided design (CAD), computing technology, mathematics, scientific principles and techniques, materials, methods, processes and mechanical construction techniques.

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

## **Pre-requisite Unit**

Nil

## **Competency Field**

Engineering science

## 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. Clarify the production task and elaborate the specifications	1.1 Determine features of object to be produced 1.2 Determine parameters for the process and production and provide initial advice based on knowledge of rapid processes and current industrial design techniques 1.3 Assess work health and safety (WHS) and regulatory requirements, codes of practice, standards and risk management requirements 1.4 Confirm object parameters with client
2. Prepare software model and relevant data files for object	2.1 Check or create initial CAD model using appropriate modelling software 2.2 Select an appropriate rapid processing technology for object implementation 2.3 Ensure that CAD model data has been pre-processed and the required files have been created for given rapid processing equipment 2.4 Research and determine social and sustainability implications of solution
3. Finalise and direct production of first-off prototype	3.1 Finalise selected process, ensuring preparation of all required programming and documentation 3.2 Direct test run first-off sample 3.3 Obtain sign-off on sample by client 3.4 Direct production of batch quantity of objects, as required

## Foundation Skills

This section describes those language, literacy, numeracy and employment skills 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.	
WHS and regulatory requirements, codes of practice, standards and risk management requirements include:	<ul style="list-style-type: none"> <li>• WHS acts, regulations and relevant standards</li> <li>• industry codes of practice</li> <li>• risk assessments</li> <li>• registration requirements</li> <li>• safe work practices</li> <li>• state and territory regulatory requirements applying to electrical work.</li> </ul>
Sustainability includes:	<ul style="list-style-type: none"> <li>• the entire sustainable performance of the organisation and plant</li> <li>• meeting all regulatory requirements</li> <li>• conforming to all industry covenants, protocols and best practice guides</li> <li>• minimising ecological and environmental footprint of process, plant and product</li> <li>• maximising economic benefit of process plant and product to the organisation and the community</li> <li>• minimising the negative WHS impact on employees, community and customer.</li> </ul>

## Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM234020A Coordinate small lot manufacture using rapid manufacture processes.

## Links

Companion Volume Implementation Guides are available on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>