



**Australian Government**

# **MEM19040 Create and manufacture jewellery or object design prototypes for the mass market**

**Release: 1**

# MEM19040 Create and manufacture jewellery or object design prototypes for the mass market

## Modification History

Release 1. Supersedes and is equivalent to MEM19040A Create and manufacture jewellery or object design prototypes for the mass market.

## Application

This unit of competency defines the skills and knowledge required to develop jewellery or object designs for the mass market. It includes analysis of commercial market opportunities, the development and testing of a prototype and evaluation of product viability as part of the overall design process

This unit applies to designers who use and integrate conceptual, creative and technical skills and knowledge to develop, adapt and implement design solutions.

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

## Pre-requisite Unit

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

## Competency Field

Jewellery

## 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 job requirements                    | 1.1 Follow standard operating procedures (SOPs)<br>1.2 Comply with work health and safety (WHS) requirements at all times<br>1.3 Use personal protective equipment (PPE) in accordance with SOPs<br>1.4 Identify job requirements from specifications |
| 2. Define and evaluate                           | 2.1 Identify commercial and design objectives of the client or                                                                                                                                                                                        |

| Elements                                                          | Performance Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i>                  | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                                                                                                                                                                                                              |
| mass market opportunities                                         | workplace<br>2.2 Analyse commercial jewellery or object markets and current and emerging product trends and technologies for impact on design directions                                                                                                                                                                                                                                                                                            |
| 3. Determine suitable jewellery or object manufacturing processes | 3.1 Identify in-house manufacturing capabilities available for producing designs and determine the strengths and weaknesses of this form of jewellery or object production<br>3.2 Identify external manufacturing resources and suppliers available for producing designs and determine their strengths and weaknesses<br>3.3 Estimate costing impacts of internal and external production suppliers on the overall design costs                    |
| 4. Develop jewellery or object design concepts                    | 4.1 Use information from market and production analysis to develop commercial product ideas<br>4.2 Consult with appropriate personnel to analyse and refine ideas and develop a design brief<br>4.3 Test design brief with appropriate personnel and confirm specifications for product development<br>4.4 Develop jewellery or object design concepts and solutions in accordance with design brief and determine required manufacturing processes |
| 5. Specify design production requirements                         | 5.1 Document design and production specifications<br>5.2 Identify target audience, market position and objectives for jewellery or object<br>5.3 Prepare costing estimates based on specifications<br>5.4 Develop and present product proposal to test viability and confirm design specifications<br>5.5 Develop work plan for design production that clearly outlines stages, resources and responsibilities                                      |
| 6. Prepare design prototype                                       | 6.1 Plan for the production of jewellery or object design prototype<br>6.2 Prepare materials and equipment for development based on prototype requirements<br>6.3 Produce jewellery or object design prototype in accordance with design specifications<br>6.4 Evaluate production and design results against design brief,                                                                                                                         |

| Elements                                         | Performance Criteria                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i> | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                                                                          |
|                                                  | costings, marketing objectives and specifications<br>6.5 Make adjustments to concept, specifications or production processes to improve result<br>6.6 Finalise design and production specifications based on testing                                                                                            |
| 7. Document and present design solution          | 7.1 Prepare documentation and drawings of design solution to clearly demonstrate jewellery or object features and specifications<br>7.2 Present design solution prototype to relevant personnel and seek feedback<br>7.3 Evaluate design process and outcomes to determine success in meeting design objectives |

## 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.

|                                                               |                                                                                                                                                                                             |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specifications include one or more of the following:          | <ul style="list-style-type: none"> <li>• job sheets</li> <li>• sketches</li> <li>• work instructions.</li> </ul>                                                                            |
| Manufacturing processes include one or more of the following: | <ul style="list-style-type: none"> <li>• centrifugal casting</li> <li>• spinning</li> <li>• engraving</li> <li>• electroplating</li> <li>• laser cutting</li> <li>• die forming.</li> </ul> |
| Appropriate personnel include one or more of the              | <ul style="list-style-type: none"> <li>• supervisor</li> <li>• manager</li> </ul>                                                                                                           |

|                                                           |                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| following:                                                | <ul style="list-style-type: none"><li>• trainer</li><li>• mentor</li><li>• team member.</li></ul>                                                                                                                                                                                                                                                                                       |
| Market research includes one or more of the following:    | <ul style="list-style-type: none"><li>• analysis of target market characteristics</li><li>• sample testing</li><li>• discussions with retailers and suppliers</li><li>• discussions with staff and management</li><li>• review of media portrayals</li><li>• review of jewellery or object shows</li><li>• review of current pricing strategies and price points of products.</li></ul> |
| Tools and equipment include one or more of the following: | <ul style="list-style-type: none"><li>• paper</li><li>• watercolours</li><li>• pastels</li><li>• inks</li><li>• pencils</li><li>• stencils</li><li>• rubbers</li><li>• calculators.</li></ul>                                                                                                                                                                                           |
| Design documents include one or more of the following:    | <ul style="list-style-type: none"><li>• sketches</li><li>• illustrations</li><li>• concept drawings</li><li>• working drawings</li><li>• technical data</li><li>• supporting information</li><li>• specifications</li><li>• production plans.</li></ul>                                                                                                                                 |
| Costings include one or more of the following:            | <ul style="list-style-type: none"><li>• labour</li><li>• overheads</li><li>• materials</li><li>• tooling</li><li>• equipment</li><li>• outsourcing.</li></ul>                                                                                                                                                                                                                           |

## Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM19040A Create and manufacture jewellery or object design prototypes for the mass market.

## Links

Companion Volume implementation guides are found in VETNet -

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

# Assessment Requirements for MEM19040 Create and manufacture jewellery or object design prototypes for the mass market

## Modification History

Release 1. Supersedes and is equivalent to MEM19040A Create and manufacture jewellery or object design prototypes for the mass market.

## 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:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications, SOPs and design documentation for creating and manufacturing jewellery or object design prototypes for the mass market
- analysing jewellery or object markets to identify commercial opportunities by conducting market research
- identifying in-house manufacturing capabilities
- estimating costings of internal and external production, including labour, overheads, materials, tooling, equipment and outsourcing
- undertaking numerical operations, geometry and calculations associated with creating and manufacturing jewellery or object design prototypes
- developing a design brief and determining key parameters
- applying creative processes to develop, refine and test design concepts
- applying knowledge of materials and production processes to jewellery or object design
- planning and producing design prototypes and finalising production specifications on at least two occasions
- preparing and presenting design concepts on at least two occasions to appeal to the specific needs of the intended audience
- evaluating success of design in meeting design brief and commercial objectives.

*Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.*

## Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- difference between one-off, limited edition, series and mass-produced products and the benefits and opportunities for jewellery or object designs

- supply chain management
- outsourcing arrangements
- cost-benefit analysis methods
- research resources and methods for investigating design information
- elements and principles of design as they relate to design of jewellery or objects
- appropriate personnel to consult regarding analysing and refining ideas and testing the design brief
- working properties of jewellery or object materials
- methods of production and manufacturing processes for jewellery or objects
- design resources
- brainstorming and other idea generation techniques for research and idea development
- planning and production requirements for design prototypes
- costing considerations
- requirements for finalising design and production specifications
- elements and principles of design
- design considerations
- drawing media and their functions and applications
- drawing tools and their functions and applications
- design documentation
- form drawing development
- options available for drawing presentation
- enhancement techniques
- types of working drawings and their uses
- interrelation between technical and design drawings
- criteria used to evaluate the design against the design brief and commercial objectives.
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## Assessment Conditions

- Assessors must:
  - have vocational competency in creating and manufacturing jewellery or object design prototypes for the mass market at least to the level being assessed with relevant industry knowledge and experience
  - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must 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 that reflects 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.

- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- 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.
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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>