



Australian Government

Department of Education, Employment and Workplace Relations

MEM19052A Produce complex objects using silversmithing techniques

Release: 1

MEM19052A Produce complex objects using silversmithing techniques

Modification History

New unit

Unit Descriptor

This unit of competency covers the skills and knowledge required to design and create complex objects using a range of silversmithing techniques.

It includes assessing the application of the design brief in the final outcome.

Application of the Unit

This unit requires application of silversmithing techniques in the production of objects where consistency of outcomes is required across multiple items. For example, a cutlery set where a standard of quality and finish must be repeated across many pieces. It also applies to the production of complex pieces, such as tea or coffee sets or trophies, which require extensive soldering operations and complex finishing procedures.

The unit would typically apply to post-trade study or to jewellers specialising in large silver work.

Band A
Unit Weight 4

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEM19033A Create silversmithing objects

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

1	Design a complex object for silversmithing	1.1	Identify and implement occupational health and safety (OHS) and environmental requirements for carrying out the work and for the work area
		1.2	Determine requirements from the design brief, research and discussions with appropriate personnel, if required
		1.3	Evaluate relevant research information, references and resources to the design process
		1.4	Record concept development through a range of drawings, notations and design options
		1.5	Prepare production plans for selected design solution and refine design, as appropriate
		1.6	Produce a model or maquette of the selected design
		1.7	Determine and obtain resources and equipment to undertake the task
2	Apply silversmithing techniques	2.1	Implement OHS requirements for carrying out the work
		2.2	Determine appropriate silversmithing techniques and equipment through testing and experimenting, if required
		2.3	Select and apply a range of silversmithing techniques and processes to produce the objects
		2.4	Determine and apply the appropriate soldering operations for complex items that require a large number of joins to be undertaken
		2.5	Produce objects to design specifications and ensure consistency across items, as relevant

- 2.6 Apply knowledge to reduce the production of fire-scale during heating operations
 - 2.7 Apply materials and process knowledge to identify and address production problems or inconsistencies
 - 2.8 Apply relevant surface finishing techniques to the objects
- 3 Evaluate objects for meeting the design brief
 - 3.1 Implement OHS requirements for finishing the work
 - 3.2 Test objects for function against the design brief, if required
 - 3.3 Assess consistency of outcome quality in multiple objects and complex design features
 - 3.4 Evaluate and document design processes
 - 3.5 Clean up and maintain production environment
 - 3.6 Apply appropriate control measures to hazardous substances according to environmental requirements

Required Skills and Knowledge

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

Required skills

Required skills include:

- researching information
- sketching and interpreting drawings
- generating ideas and concepts
- working with a wide range of materials and techniques
- using relevant tools and equipment for producing objects
- preparing and maintaining silversmithing tools and equipment (e.g. hammers, stakes, files and vices)
- applying a range of silversmithing techniques to high standard
- producing work where fire-scale is controlled during production and applying a high standard of finishing skills
- achieving consistency in standards across multiple pieces
- working effectively with others
- communicating effectively

Required knowledge

Required knowledge includes:

- concept development techniques
- purpose, function and maintenance of silversmithing equipment
- techniques/manufacturing methods for silversmithing production
- soldering techniques for silversmithing
- control measures for fire-scale
- binding and locating techniques

Evidence Guide

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.

Overview of assessment	A person who demonstrates competency in this unit must be able to apply a range of silversmithing techniques to the design and creation of complex or multiple objects.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently: • implement OHS workplace procedures and practices, including the use of risk control measures • demonstrate the creation and production of silversmithing objects on more than one occasion and in different contexts. This includes: • development of a sketchbook of drawings and notations that record: • ideas and design options generated • concept development • maquette production • relevant research • plans for production solutions • production of tests and experiments, where appropriate • production of 3-D objects to specification, in particular, accuracy and consistency of multiple forms and/or critical functionality of complex items • production of complex or multiple objects which require a range of silversmithing techniques.
Context of and specific resources for assessment	• Assessment may occur on the job or in an appropriately simulated environment. Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. • Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. • Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include

	equipment modified for people with disabilities.
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Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of the MEM05 Metal and Engineering Training Package. • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge. • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application. • Assessment may be applied under project-related conditions (real or simulated) and require evidence of process. • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • Assessment may be in conjunction with assessment of other units of competency where required.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

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.

Complex pieces	Complex pieces may include: • tea or coffee service • cutlery set • ecclesiastical pieces • decorative boxes • trophies
Appropriate personnel	Appropriate personnel may include: • supervisor • manager

	• trainer • mentor • teacher • team member • client
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Silversmithing	Silversmithing may include: • maquette production • sinking • crimping • raising • planishing • spinning • forging • hinge making • fabricating • forming
Surface finishing techniques	Surface finishing techniques may include: • electroplating • planishing • patination • polishing • burnishing • heat treating
OHS requirements	OHS requirements may include: • legislation • protective equipment • material safety management systems • hazardous substances and dangerous goods code • local safe operation procedures • awards provisions
Environmental requirements	Environmental requirements may relate to: • liquid waste • solid waste • gas, fume, vapour, smoke emissions, including fugitive emissions, and dust • excessive energy and water use • excessive noise
Enterprise procedures	Enterprise procedures may include: • the use of tools and equipment • instructions, including job sheets, cutting lists, plans, drawings and designs • reporting and communication • manufacturer specifications • operational procedures

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Unit Sector(s)

Jewellery

Custom Content Section

Not applicable.