



Australian Government

Department of Education, Employment and Workplace Relations

MEM19036A Use specialised techniques to produce jewellery and objects

Release: 1

MEM19036A Use specialised techniques to produce jewellery and objects

Modification History

Not applicable.

Unit Descriptor

This unit of competency covers the skills and knowledge required to apply a range of specialised or complex techniques to produce jewellery and/or object designs.

Application of the Unit

This unit applies to enterprises where jewellery is designed and made according to design specifications. Metal working skills described by this unit are not performed to trade level outcomes, rather to allow the production of one-off custom jewellery and object designs. Application of this unit requires use of a range of hand and power tools used in the construction of jewellery and objects.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

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| 1 Prepare for applying specialised production techniques | 1.1 Establish work area and prepare for work |
| | 1.2 Identify and implement occupational health and safety (OHS) and environmental requirements for carrying out the tasks and for the work area |

- 1.3 Analyse design specifications and related information for jewellery or object and determine production requirements from documentation and discussion with appropriate persons
- 1.4 Develop a production plan, identifying the multiple steps and operations for manufacture, required components, soldering plan, fitting of pieces, required materials, tools, equipment and processes/techniques
- 1.5 Identify potential manufacturing difficulties for jewellery or object and develop solutions based on understanding of materials, their limitations and workability, as well as knowledge of processes and techniques
- 1.6 Select and prepare materials and equipment required
- 2 Apply specialised techniques
 - 2.1 Implement OHS and environmental requirements
 - 2.2 Determine and apply calculations and formulae, as necessary, to determine material quantities, dimensions and sizing
 - 2.3 Produce jewellery or object features using specialised techniques
 - 2.4 Identify faults and problems and take corrective action
 - 2.5 Confirm work meets design specifications
 - 2.6 Finish work according to requirements of technique used
- 3 Present and evaluate finished piece
 - 3.1 Confirm finished piece meets design specifications
 - 3.2 Prepare piece for presentation
 - 3.3 Evaluate result and identify and make any final improvements

Required Skills and Knowledge

Required knowledge includes:

- range and uses of specialised techniques
- calculations and measurements
- reasons for selecting particular metals, construction methods, manufacturing and finishing techniques
- tools and equipment matched to processes
- planning and process stages
- working properties of precious and non-precious metals and/or other materials
- fine detail manufacturing processes
- knowledge of workplace hazards and emergency procedures
- various components of jewellery items
- appropriate measuring devices and recording methods
- procedures for final treatment
- safe handling and storage of items
- use and application of personal protective equipment
- safe work practices and procedures
- relevant hazards and control measures

Required skills include:

- calculating required material size
- using tools and equipment for jewellery and object construction
- interpreting design specifications and following instructions
- interpreting drawings
- measuring
- selecting appropriate materials and manufacturing techniques
- applying appropriate production and finishing procedures
- identifying alternative metals/materials
- meeting design specifications
- cleaning materials/items
- filing and finishing items
- communicating design and construction information

Evidence Guide

Overview of assessment	A person who demonstrates competency in this unit must be able to apply a minimum of four (4) specialised techniques to produce jewellery and object designs according to specification.
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 • apply a minimum of four specialised techniques to produce jewellery and object designs on more than one occasion and in different contexts. This includes: • determining manufacturing requirements • developing a production plan • using a combination of techniques, materials and processes • finishing and inspecting work.
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.
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

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, fumes, 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
Specialised techniques	Specialised techniques may include: • repousse or chasing • forging • electro forming • die forming • etching • granulation • hydraulic pressing • patination • inlay • anodising • cuttlefish casting • sand casting • water casting • box construction • lamination • tap and die

	• photoetching • mokume • kumboo • hollow forming • enamelling
Equipment	Equipment may include: • draw bench • round, square and fancy draw plates • various holding and securing devices • pliers • burrs • scaupers • burnishers • emery and beaderns • soldering torch • jewellery bench • adjustable chair • pickle bath and heater • propane-oxy heating equipment • flexible drive and drill bits • spit jigs • hand tools • measuring and marking out equipment • abrasives, lubricants and compounds • stock gauge rod, wire for chain links • polishing lathe with extraction, buffs, brushes and compounds • tumbler with stainless/steel shot • protective clothing and equipment
Materials	Materials may include: • gold • platinum • palladium • silver • copper • pewter and their alloys • stones and gems • catches, chains and other jewellery components • finishing materials

Unit Sector(s)

Jewellery and horological

Custom Content Section

Not applicable.