Australian Government

Department of Education, Employment and Workplace Relations

# CUVCER502A Investigate ceramic materials and processes

**Release: 1**

# CUVCER502A Investigate ceramic materials and processes

## Modification History

| Version | Comments |
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| CUVCER502A | This version first released with *CUV11 Visual Arts, Craft and Design Training Package version 1.0* |

## Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to research and explore selected ceramic materials and processes and integrate their use into creative practice.

## Application of the Unit

Ceramicists apply the skills and knowledge in this unit. They could be designing and making functional items or art pieces.
Material and process exploration at this level is a largely independent activity with some mentoring and guidance as required. It would normally include investigation of a range of materials and processes to develop an individual professional style. In practice, this process is integrated with the skills described in the unit CUVPRP501A Realise a body of creative work.

## Licensing/Regulatory Information

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

## Pre-Requisites

Not applicable.

## Employability Skills Information

This unit contains employability skills.

# Elements and Performance Criteria Pre-Content

| **Element** | **Performance Criteria** |
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| *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

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| 1. Research ceramic materials and processes | 1.1 Research the detailed ***physical properties and capabilities*** of different ***ceramic materials*** |
| | 1.2 Investigate the ***safety issues*** associated with different materials and processes prior to use |
| | 1.3 Collate and store safety and technical ***data*** to meet safety requirements and inform future practice |
| | 1.4 Investigate the relationship between materials and ***ceramic processes*** |
| | 1.5 Determine ***cost and supply parameters*** |
| 2. Select ceramic materials and processes for exploration | 2.1 Assess the ***creative and professional opportunities*** offered by different ceramic materials and processes |
| | 2.2 Determine ***limitations and constraints*** of particular materials and processes |
| | 2.3 Select particular materials and processes that suit own practice |
| 3. Integrate ceramic materials and processes into own work | 3.1 Explore ***different ways of working with materials and processes*** to achieve desired outcomes |
| | 3.2 Challenge and stretch the capabilities and uses of different materials and processes through experimentation |
| | 3.3 Develop ***own ways of working*** with materials and processes |
| | 3.4 Engage in informed discussion with others about the characteristics and opportunities of particular ceramic materials and processes |
| | 3.5 Establish and follow ***safe work practices*** |
| 4. Manage ceramic resources in professional practice | 4.1 Establish a ***sustainable supply*** of ceramic resources |
| | 4.2 Develop ways of working with resources that minimise waste |
| | 4.3 Maintain the quality and life of ceramic resources through ***appropriate handling and storage*** |

# Required Skills and Knowledge

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

### Required skills

- well-developed ceramic skills
- communication skills to engage in informed discussion around materials, processes and their relationship with ideas
- critical thinking and analytical skills to evaluate and make judgements about relationships between ceramic materials, techniques and processes
- initiative and enterprise skills to:
  - develop individual ways of working with materials and processes
  - identify and act on opportunities for own practice presented by different materials and processes
- learning skills to develop and refine own skills to a professional practice standard
- literacy skills to analyse varied and technical information about ceramic materials and processes
- problem-solving skills to identify and resolve technical problems in ceramic work
- self-management and planning skills to:
  - develop own ways of working with ceramic materials and processes
  - research and organise sustainable supply of materials and processes
  - technology skills to use the internet as a research tool.

### Required knowledge

- ways in which a wide range of ceramic materials and processes can be used, adapted, combined and challenged by the professional artist
- physical properties and capabilities of the selected materials and processes
- types of technical and other data that may need to be stored for safety and other reasons
- characteristics of different materials under different treatments and the potential of these characteristics to achieve different effects
- cost and supply parameters for ceramic materials and tools in the context of professional practice
- storage requirements and options for different materials
- intellectual property issues and legislation associated with ceramics as a professional practice
- sustainability issues for the professional operation of a ceramics practice
- OHS requirements for the set-up and operation of a professional work space.

# 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.*

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| **Overview of assessment** | |
| **Critical aspects for assessment and evidence required to demonstrate competency in this unit** | Evidence of the ability to:<br>• apply knowledge of ceramic materials and processes and how they may be adapted and extended at a professional level<br>• evolve and refine ways of working with materials and processes through a demonstrated process of experimentation<br>• integrate materials and processes into own work in a way that supports coherence of the creative work<br>• demonstrate technical proficiency in the independent use of selected materials and processes<br>• use safe and sustainable work practices. |
| **Context of and specific resources for assessment** | Assessment must ensure access to:<br>• a safe ceramics work space<br>• equipment, materials and tools used to produce ceramics work. |
| **Method of assessment** | A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:<br>• evaluation of the use of materials and processes in terms of the coherence of the body of work<br>• evaluation of processes used by the candidate to develop new ways of working with ceramic materials and processes<br>• evaluation of the work documentation<br>• questioning and discussion about candidate's intentions and the work outcome<br>• review of portfolios of evidence<br>• review of third-party reports from experienced practitioners.<br>Assessment methods should closely reflect workplace demands (e.g. literacy) and the needs of particular groups (e.g. people with disabilities, and people who may have literacy or numeracy difficulties, such as speakers of languages other than English, remote communities and those with interrupted |

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| | schooling). |
| **Guidance information for assessment** | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:<br>• CUVPRP501A Realise a body of creative work. |

# 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.*

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| ***Physical properties and capabilities*** may include: | • properties of clay bodies, such as:<br>  • fine or coarse<br>  • fired strength: robust or fragile<br>  • green strength or fragility<br>  • high fire or low fire<br>  • opaque or translucent<br>  • plastic or short<br>  • vitrified, sintered or raw<br>  • white or dark<br>• properties of:<br>  • glaze materials<br>  • colouring oxides and commercial stains<br>  • various model and mould-making materials. |
| ***Ceramic materials*** may include: | • cardboard and paper<br>• commercial ceramic colours<br>• decorating slips and engobes<br>• glazes<br>• latex<br>• oxides<br>• pottery plaster<br>• range of casting slips<br>• range of plastic clay bodies<br>• resins<br>• shellac<br>• silicones<br>• wax. |
| ***Safety issues*** may relate to: | • dust and airborne particles<br>• electrical safety<br>• equipment used<br>• fire<br>• fumes<br>• kilns<br>• manual handling requirements |

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| | • noise<br>• sharp objects<br>• use and labelling of chemicals<br>• use of equipment with moving parts<br>• wet surfaces<br>• work posture. |
| ***Data*** may include: | • firing logs<br>• material safety data sheets (MSDS)<br>• quantity calculations<br>• recipes for bodies, slips, glazes and decorating materials<br>• records of experimentation<br>• technical data sheets (TDS)<br>• throwing logs. |
| ***Ceramic processes*** may include: | • firing processes, including:<br>  • raku, earthenware, midfire and stoneware firings in a fuel fired kiln<br>  • raku, earthenware, midfire and stoneware firings in an electric kiln<br>• forming techniques including:<br>  • deformation, alteration and assembly techniques<br>  • extruding<br>  • handbuilding (model, pinch and coil)<br>  • mould making, slipcasting and press moulding<br>  • ram pressing<br>  • throwing and turning<br>• glazing techniques, including:<br>  • brushing<br>  • dipping<br>  • layering<br>  • pouring<br>  • spraying<br>• surface decorating techniques, including:<br>  • additive processes: applied slip, sprigs and other added components<br>  • subtractive processes: carving, incising, impressing and eroding<br>  • use of colour<br>  • use of pattern and texture. |
| ***Cost and supply parameters*** may | • budgetary restrictions<br>• capacity to share costs with others<br>• continuity of supply |

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| include: | • delivery issues<br>• location of suppliers<br>• potential for use of found objects<br>• terms of payment<br>• use of freely available natural materials<br>• use of recycled materials. |
| ***Creative and professional opportunities*** may relate to: | • creative potential:<br>  • communication of ideas<br>  • personal affinity with particular materials and processes<br>  • potential for combining materials and processes<br>  • potential for interactions of different materials and processes<br>  • themes in work<br>• professional potential:<br>  • collaboration<br>  • emerging market trends<br>  • professional development<br>  • saleability. |
| ***Limitations and constraints*** may include: | • availability of supplies<br>• access to skilled and experienced personnel<br>• financial expenditure<br>• location and geography<br>• safety aspects of materials and processes<br>• skill level required for use of selected materials and processes<br>• storage facilities<br>• studio space<br>• timeframe<br>• transportation. |
| ***Different ways of working with materials and processes*** may involve: | • combining materials and processes in new ways<br>• making samples, prototypes and maquettes<br>• varying established approaches to achieve new effects<br>• working collaboratively with a particular material or process. |
| ***Own ways of working*** may include: | • approaches that reflect and support individual voice<br>• particular nuances and subtleties unique to the individual artist. |
| ***Safe work practices*** may include: | • completing MSDS<br>• correct disposal of waste materials<br>• dust and fume extraction |

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| | • ergonomic safety<br>• managing risk<br>• procedures for using kilns and other specialist equipment<br>• reporting accidents and incidents<br>• use of tools and equipment<br>• using clearly designated wet and dry areas<br>• using personal protective equipment (PPE). |
| ***Sustainable supply*** is: | • available when needed<br>• environmentally friendly<br>• of appropriate quality<br>• safe<br>• within budgetary requirements. |
| ***Appropriate handling and storage*** may include: | • alternative casting materials: silicone, resins and waxes<br>• appropriate racks, shelving and cupboards for:<br>  • biscuit fired work<br>  • damp work in progress<br>  • decorating materials<br>  • dry work in progress<br>  • glazed work<br>  • plaster moulds<br>  • smaller quantities of dry materials<br>  • tools and equipment<br>• appropriate storage containers and rooms for storing:<br>  • bulk dry materials<br>  • casting slips<br>  • plastic clay<br>  • pottery plaster<br>• liquid materials, including:<br>  • commercial colours<br>  • solvent-based liquids<br>  • water-based liquids. |

# Unit Sector(s)

Visual communication – ceramics

# Custom Content Section

Not applicable.