



Australian Government

CPPSIS4039 Design and produce maps

Release: 1

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Modification History

Release 1.

New unit of competency.

This version first released with CPP Property Services Training Package Version 3.

Application

This unit of competency specifies the outcomes required to apply cartographic design principles and conventions to design and produce maps and associated products for use in surveying and spatial information services applications. The unit covers activities to identify specifications and information on which to base the map design and layout, and produce a map that includes elements, features and spatial reference systems and which meets client needs. It requires using geographic information system (GIS) or map design and production software.

The unit supports those who work in support positions in a surveying and spatial information services team in areas such as surveying, cartography, mapping, town planning (land development) and GIS.

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

Pre-requisite Unit

Nil

Unit Sector

Surveying and spatial information services

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.
1. Plan map design.	1.1. Project requirements, and map type and purpose are determined in consultation with appropriate persons .
	1.2. Information is gathered and analysed to determine geographic coverage of map area according to project requirements.

- 1.3. Required datasets are identified, sourced and assessed for suitability according to project requirements.
 - 1.4. Geoprocessing workflow is planned according to project requirements.
 - 1.5. Scale and map layout are designed according to project requirements.
 - 1.6. Cartographic and infographic principles, standards and conventions are identified and applied according to project requirements.
 - 1.7. Equipment and software are selected and operated according to organisational requirements.
2. Produce map.
 - 2.1. Geoprocessing is carried out on source datasets to produce the data required for map content.
 - 2.2. **Map components** are identified and incorporated into map according to project requirements.
 - 2.3. Spatial reference systems are adopted and applied to locate and align features on map according to project requirements.
 - 2.4. Map is produced to meet project and organisational requirements and guidelines.
 - 2.5. Accuracy of map layout and position is checked against project and organisational requirements.
3. Finalise process.
 - 3.1. Map is finalised and hard copy or digital output is completed according to project requirements.
 - 3.2. Documentation is completed according to organisational requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Numeracy skills to:	• apply datums and projections to map • read data attributes and numeric datasets.
Oral communication skills to:	• ask questions to clarify map requirements.
Reading skills to:	• interpret cartographic information, including symbols, colour, images, labels and typography.
Technology skills to:	• use the functions of mapping software applications to geoprocess data.

Range of Conditions

This section specifies 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. Bold italicised wording, if used in the performance criteria, is detailed below.

Map type must include at least one of the following:	• cadastral map • general reference map • infographic map • special purpose map • thematic map • topographic map.
Appropriate persons must include at least two of the following:	• client • experienced colleague • qualified cartographer • supervisor or line manager.
Map components must include:	• elevations • spatial data features • spatial data references.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSIS4039 Design and produce maps

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Performance Evidence

A person demonstrating competency in this unit must satisfy the requirements of the elements, performance criteria, foundation skills and range of conditions of this unit. The person must also design and produce two different types of maps for use in surveying and spatial information services applications.

While designing and producing the above maps, the person must:

- carry out geoprocessing on several vector datasets with attributes from sourced data in order to produce the data that comprises map content
- communicate clearly with others to clarify project requirements and required map design and detail
- comply with organisational requirements relating to:
 - records and documentation
 - health and safety when working on screen-based equipment
 - quality assurance
- exercise precision and accuracy relating to map design and layout
- incorporate appropriate marginal information, including data sources, georeferencing system, map graticule, legend and scale
- incorporate raster data
- insert content into the map frame data that shows the application of cartographic principles
- use equipment, including a computer, printer and mapping software required to produce maps.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- cartographic and infographic design principles and conventions
- common scales used on maps
- key features of spatial reference systems
- procedures for applying datums and projections to map making
- main types of geoprocessing functions in mapping software
- map features and how they are represented

- organisational procedures for map production, reporting and equipment use
- typical characteristics and content of different types of maps, as listed in the range of conditions.

Assessment Conditions

The following must be present and available to learners during assessment activities:

- equipment:
 - computer, printer and required mapping software
- specifications:
 - project and design specifications
 - organisational policies and procedures relating to:
 - work health and safety
 - data privacy and information copyright
- physical conditions:
 - access to equipped work station
- relationships with team members and supervisor:
 - working in a team
- relationships with client:
 - client consultation required.

Timeframe:

- as specified by project requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

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