



**Australian Government**

# **CPPSSI4030 Operate surveying equipment**

**Release: 1**

# CPPSSI4030 Operate surveying equipment

## Modification History

Release 1 This version first released with CPP Property Services Training Package Release 12.0.

This unit supersedes and is equivalent to CPPSIS4030 Operate surveying equipment.

## Application

This unit specifies the skills and knowledge required to use a range of surveying equipment for data capture or spatial data set-out. It includes selecting, setting up and operating surveying equipment to perform basic measurements, and recording and calculating horizontal and vertical information. It also includes validating and checking data accuracy and performing basic data reductions and manipulation using software.

This unit is suitable for entry-level technicians who use a broad range of cognitive, technical and communication skills to select and apply a range of methods, tools, materials and information to complete routine and non-routine activities and provide and transmit solutions to a variety of predictable and sometimes unpredictable problems.

Surveying and spatial information skills are applied in a range of industry contexts, including town planning, civil construction, mining, engineering, health, agriculture and defence.

All work must be carried out to comply with workplace procedures, in accordance with relevant state/territory regulations that govern surveying work, as well as work health and safety (WHS) legislation and regulations that apply to the workplace.

Cadastral surveying must be undertaken under the supervision of a registered surveyor. Users must check with the relevant regulatory state/territory authority before delivery.

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

## Pre-requisite Unit

Nil.

## Unit Sector

Surveying and Spatial Information Services

## Elements and Performance Criteria

Elements describe the      Performance criteria describe what needs to be done to

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| essential outcomes.         | demonstrate achievement of the element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1 Plan surveying tasks.     | <ul style="list-style-type: none"><li>1.1 Identify and clarify task requirements with appropriate persons.</li><li>1.2 Interpret technical and diagrammatic information in task specifications and designs.</li><li>1.3 Review design information to identify components to be measured in consultation with appropriate persons.</li><li>1.4 Select and check surveying equipment to meet task requirements and report problems according to manufacturer and organisational requirements.</li><li>1.5 Identify hazards associated with task, implement control measures to manage risks and report problems according to organisational requirements.</li></ul> |
| 2 Execute surveying tasks.  | <ul style="list-style-type: none"><li>2.1 Set up and adjust equipment required to measure identified survey components according to standard operating procedures.</li><li>2.2 Operate equipment and software to manipulate basic spatial data.</li><li>2.3 Cooperate with on-site personnel according to task requirements.</li><li>2.4 Comply with organisational, legislative and manufacturer requirements for working safely.</li></ul>                                                                                                                                                                                                                      |
| 3 Calculate surveying data. | <ul style="list-style-type: none"><li>3.1 Reduce and manipulate measured surveying data for comparison with design to meet task and organisational requirements.</li><li>3.2 Confirm that measurements and computations meet industry-accepted standards for accuracy.</li><li>3.3 Check data against task requirements and identify and resolve errors in consultation with appropriate persons.</li><li>3.4 Validate and record clear and accurate measurements, computations and field checks according to industry-accepted standards and organisational requirements.</li></ul>                                                                              |

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|---|---------------------------|-----|-------------------------------------------------------------------------------------------------------|
| 4 | Finalise surveying tasks. | 4.1 | Finalise surveying activities and process data according to task and organisational requirements.     |
|   |                           | 4.2 | Record and document measurements and data according to organisational requirements.                   |
|   |                           | 4.3 | Pack up and store equipment according to manufacturer specifications and organisational requirements. |
|   |                           | 4.4 | Report any identified faults and problems with equipment.                                             |
|   |                           | 4.5 | Complete documentation and store data according to organisational requirements.                       |

## Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Unit Mapping Information

Supersedes and is equivalent to CPPSIS4030 Operate surveying equipment.

## Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

# Assessment Requirements for CPPSSI4030 Operate surveying equipment

## Modification History

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## Performance Evidence

To demonstrate competency a candidate must meet the elements and performance criteria of this unit for two different surveying tasks.

In completing the surveying tasks the candidate must operate a total station and an automatic, digital or laser level as well as one other item of surveying equipment for spatial data capture or data set-out from the following:

- real-time kinematic (RTK) equipment/global navigation satellite system (GNSS)
- terrestrial laser scanner
- unmanned aerial vehicle (UAV).

The candidate must use two of the following while capturing or setting out surveying data for each of the above surveying tasks:

- compass
- data-recording equipment
- digital or hard-copy map or image
- distance-measuring wheel
- hand-held laser measuring device
- measuring tape
- prism with prism pole
- levelling staff
- retro targets.

## Knowledge Evidence

To be competent in this unit a candidate must demonstrate knowledge of:

- types, functions and limitations of surveying equipment
- methods for setting up, levelling, checking calibration and using the surveying equipment
- techniques to solve basic problems relating to height, dimension, direction and position
- key features of geographic and projected spatial reference systems

- key features of the Australian Height Datum
- acquisition methods for surveying data
- attributes associated with a spatial dataset
- methods for downloading spatial data collected using the surveying equipment
- accepted organisational standards for recording metadata
- use of personal protective equipment (PPE)
- relevant safe work method statements (SWMS) and job safety analyses (JSA).

## Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting where these skills and knowledge would be performed.

Candidates must have access to:

- equipment
- equipment operating manuals
- standard operating procedures and documentation relating to work tasks.

## Links

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