



Australian Government

CPPSSI4031 Perform surveying computations

Release: 1

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Modification History

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

This unit supersedes and is equivalent to CPPSIS4031 Perform surveying computations.

Application

This unit specifies the skills and knowledge required to perform surveying computations used in surveying and spatial information services. Computations involve simple and complex figures with regular and irregular sides, and computations for traverses, angles, bearings, distances, heights, coordinates, perimeters and areas. Computations also include those for simple horizontal curves and horizontal set-out data for curves. Specialised hand-held devices and software applications are routinely used.

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.

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 essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---------------------------------------|-----|--|
| 1 Prepare for surveying computations. | 1.1 | Identify computational requirements for surveying tasks. |
| | 1.2 | Interpret computational data provided in diagrammatic |

		form.
	1.3	Identify computational methods according to industry and organisational procedures.
	1.4	Select functions appropriate for computational task requirements on device being used.
2 Execute computation tasks.	2.1	Apply the principles of algebra, geometry and trigonometry to plane geometry and figures with regular and irregular sides.
	2.2	Perform computations on coordinates of a simple closed traverse using computational equipment and compute missing elements and coordinates.
	2.3	Reduce and perform adjustments to traverse information according to industry-accepted standards and task requirements.
	2.4	Perform computations on all elements of simple circular curves and solve missing elements according to task requirements.
3 Finalise computation tasks.	3.1	Systematically and legibly lay out computations according to organisational requirements and industry-accepted methods.
	3.2	Apply checking procedures to identify computation errors and to verify the accuracy of results.
	3.3	Record computations and results using industry-accepted templates and formats.

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 CPPSIS4031 Perform surveying computations.

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 CPPSSI4031 Perform surveying computations

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Performance Evidence

To demonstrate competency a candidate must meet the elements and performance criteria of this unit by accurately performing and checking the following computations:

- two calculations of areas from bearings and distances or coordinates
- two calculations of angles, distances, perimeters and areas for simple figures and two for complex figures
- two calculations of surveying data required to set out structures in relation to curves and lines
- two resection calculations
- two intersection calculations
- two traverse calculations including:
 - coordinates (easting and northing)
 - linear misclose and accuracy ratio
 - compass/Bowditch adjustment and area calculation.

Knowledge Evidence

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

- common computational terms and methods used in surveying
- types of traverse
- methods for checking accuracy of computations to identify errors and solve problems
- methods for computing basic traverse data
- optimum geometry for resection and intersection observations
- sources of error when carrying out resection and intersection observations
- organisational procedures for completing surveying records and documentation.

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:

- scientific or programmable calculator.

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