Draft 0.1
This is a draft update to CPPSIS4031 Perform surveying computations: https://training.gov.au/Training/Details/CPPSIS4031.

Code changed to CPPSUR3041.
Changed PCs to active voice.
Changed 'person' to 'candidate' in PE
Reference to: 'two different projects' in first sentence of PE may be problematic at audit as no specific details provided

Range of Conditions added to Knowledge Evidence.

I've added mapping info.
TAG will need to reassess this as unit is redeveloped.

Unit of Competency

CPPSUR4031 Perform surveying computations

Modification history

Release	Comments
~~1~~	~~This version first released with CPP Property Services Training Package Version 3. Replaces superseded equivalent CPPSIS4031A Perform surveying computations.~~
	Replaces superseded equivalent CPPSIS4031 Perform surveying computations

Application

This unit specifies the skills and knowledge required to perform surveying computations in a plane coordinate system. Computations involve simple and complex figures with regular and irregular sides, and computations for traverses, angles, bearings, coordinates, perimeter and area. Computations include simple horizontal curves and horizontal set-out data for curves. Specialised software applications are routinely used.

The unit supports those who work in support positions in a surveying team to conduct surveying and mapping tasks.

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

Prerequisite Unit

None

Unit Sector

Surveying and spatial information services

Elements and Performance Criteria

1. Prepare for surveying computations.	1.1 Identify task requirements in consultation with appropriate persons. 1.2 Identify computational methods according to industry and organisational procedures. 1.3 Select computational equipment according to task and organisational requirements.
2. Execute computation tasks.	2.1 Perform computations on coordinates of a simple closed traverse using computational equipment, and adjust and compute missing elements and coordinates. 2.2 Reduce and perform adjustments to traverse information according to industry-accepted standards and task requirements. 2.3 Perform computations on all elements of simple circular curves, and solve missing elements according to standards and organisational requirements.
3. Finalise computation tasks.	3.1 Check data and computations to ensure accuracy according to standards and task requirements. 3.2 Finalise and store computations according to organisational requirements.

Foundation Skills

Candidates require:

- numeracy skills to:
  - apply the principles of algebra, geometry and trigonometry to the plane geometry and measuring figures with regular and irregular sides
- oral communication skills to:
  - ask questions to clarify task requirements and computational formulas
  - discuss solutions to computational problems
- reading skills to:
  - interpret computational data provided in diagrammatic form
  - interpret written computational tasks
- writing skills to:
  - record computations and results using industry-accepted templates and formats
- problem-solving skills to:
  - identify errors in computational results by applying rigorous checking procedures.

Unit Mapping Information

Supersedes and is equivalent to CPPSIS4031 Perform surveying computations

Links

Companion Volume Implementation Guide:

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

Assessment Requirements for CPPSUR4031 Perform surveying computations

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Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by accurately performing the following computations for two different surveying tasks:

- calculate areas from bearings and distances or coordinates
- calculate angles, distances, perimeter and area for simple and complex figures
- set out data for simple horizontal curves
- calculate surveying data required to set out the position of curves and structures
- traverse calculations in east, north, misclose and adjustment calculations, and calculations based on adjusted coordinates
- traverse types, include opening and closing on same point and different points of known coordinates.

While performing the above surveying computations, the candidate must:

- communicate clearly with others to clarify work tasks and computational results
- comply with organisational requirements and industry-accepted standards for:
    - systematically and legibly laying out computations
    - completing records and documentation
- examine the computational results and verify the accuracy of results.

Knowledge Evidence

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

- common computational terms used in surveying
- industry-accepted methods for performing surveying computations in a plane coordinate system
- methods for checking accuracy of computations to identify errors and solve problems
- methods for computing basic traverse data
- organisational procedures for completing surveying records and documentation
- appropriate persons:
    - client
    - experienced surveying colleague
    - qualified surveyor
    - supervisor or line manager.

Assessment Conditions

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

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- equipment:
    - scientific or programmable calculator or a software application that includes surveying calculations
- specifications:
    - task specifications
    - organisational policies, procedures and documentation relating to work tasks
- relationships with team members and supervisor:
    - working in a team.

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