

Draft 0.1

This is a draft update to CPPSIS5058 Conduct geodetic surveys:

<https://training.gov.au/Training/Details/CPPSIS5058>.

Changed PCs to active voice.

Changed 'person' to 'candidate' in PE.

Code changed to CPPSUR5058.

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

CPPSUR5058 Conduct geodetic surveys

Modification history

Release	Comments
1	Replaces superseded equivalent CPPSIS5058A Conduct geodetic surveying. This version first released with CPP Property Services Training Package Version 3.
	Replaces superseded equivalent CPPSIS5058 Conduct geodetic surveys

Application

This unit specifies the skills and knowledge required to conduct a geodetic survey based on specifications and client requirements. The unit covers project management tasks relating to scheduling, measuring, recording and monitoring work progress and planning for risks and contingencies.

The unit also covers applying reference surfaces and projection planes to geodetic components and performing geodetic calculations. The unit requires using specialist equipment to measure, record and reduce data, including global navigation satellite system (GNSS). The unit requires the ability to perform geodetic calculations, validate the accuracy of data, and identify discrepancies between specifications and actual activities. It also requires using a range of coordinate systems, such as Map Grid of Australia (MGA) and Geocentric Datum of Australia (GDA) to manage surveying data.

The unit supports those who work under limited supervision in a surveying team.

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 geodetic survey	<ul style="list-style-type: none">1.1 Analyse project specifications to determine geodetic survey and client requirements in consultation with appropriate persons.1.2 Identify characteristics of operating environment and special equipment or resource requirements according to organisational requirements.1.3 Select and check equipment according to manufacturer specifications to ensure correct operation and functionality according to manufacturer specifications.1.4 Devise and follow risk management strategies to ensure project complies with legal and statutory standards and organisational requirements.
2. Plan geodetic survey.	<ul style="list-style-type: none">2.1 Schedule key activities and timelines according to available resources, and project and organisational requirements.2.2 Interpret design to identify required surveying data according to project requirements.

	<p>2.3 Select relevant reference surface and projection plane for geodetic components.</p> <p>2.4 Obtain and validate existing survey control data according to project and organisational requirements.</p>
3. Carry out geodetic surveying tasks.	<p>3.1 Implement project management mechanisms to schedule, measure, record, monitor and report work progress according to organisational requirements.</p> <p>3.2 Measure identified surveying components according to project requirements and specifications.</p> <p>3.3 Reduce measured surveying data according to project requirements and specifications.</p> <p>3.4 Validate and record measurements according to project specifications and organisational requirements.</p> <p>3.5 Identify and resolve discrepancies between specifications and actual activities and manage contingencies according to organisational requirements.</p>
4. Finalise geodetic survey.	<p>4.1 Finalise and check survey for compliance with project and organisational requirements.</p> <p>4.2 Notify appropriate persons of survey results according to organisational requirements.</p> <p>4.3 Complete survey documentation and archive data according to project and organisational requirements.</p>

Foundation Skills

Candidates require:

- planning and organising skills to:
 - plan and prioritise work to meet survey timeframes and resource constraints
- numeracy skills to:
 - apply geodetic formulas for point to point calculations on MGA
 - conduct precise measurements and calculations relating to shape and size of the earth
- oral communication skills to:
 - ask questions to clarify client requirements
 - inform clients and other stakeholders of project progress
- reading skills to:
 - analyse graphical and technical information in project specifications
- writing skills to:
 - record technical information in organisational documentation.
- technology skills to:
 - calibrate instruments using GNSS software
 - use coordinate systems, including MGA and GDA
- problem-solving skills to:
 - apply risk control and contingency strategies to anticipated and identified problems
 - select appropriate validation networks to verify accuracy of data.

Unit Mapping Information

Supersedes and is equivalent to CPPSIS5058 Conduct geodetic surveys

Links

Companion Volume Implementation Guide:

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

Assessment Requirements for CPPSUR5058 Conduct geodetic surveys

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Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- conducting a geodetic survey for two different projects.

While conducting the above geodetic surveys, the candidate must:

- analyse standards, specifications and information, including plans and drawings to determine survey requirements
- prepare for the survey by analysing specifications and operating environment to ensure adequate equipment and resources
- carry out a precise global navigation satellite system (GNSS) traverse for survey control using two of the following pieces of equipment:
 - barometer
 - GNSS equipment
 - thermometer
- identify and apply relevant geodetic coordinate systems and reference points to survey activities
- measure and compute GNSS survey traverse components using GNSS equipment and appropriate software to aid geodetic calculations
- perform calculations in a logical progression to solve geodetic surveying problems
- use coordinate systems, including Map Grid of Australia (MGA) and Geocentric Datum of Australia (GDA) to manage surveying data
- communicate clearly with clients and stakeholders to clarify and report survey information
- comply with industry-accepted standards for validating accuracy of data and identifying errors and discrepancies
- comply with organisational and legal requirements for:
 - completing records and documentation
 - recording, storing and filing data
 - using, checking and storing surveying equipment
 - working safely and using personal protective equipment (PPE)
- plan and implement project management mechanisms to ensure the survey is completed within required timeframes and project complies with specifications and standards
- plan and implement risk management and contingency strategies.

Knowledge Evidence

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

- accuracy and precision requirements for geodetic surveying data
- common terms used in geodetic surveying calculations
- coordinate systems that are compatible with GNSS, including MGA and GDA

- data reduction techniques
- industry-accepted methods for validating data to identify errors and discrepancies
- legislative, statutory and industry requirements and standards relating to work tasks
- organisational policies and procedures relating to:
 - health and safety relating to survey activities
 - reporting and documentation
 - using and allocating resources
 - using the equipment specified in the performance evidence
- project management techniques for scheduling, measuring and monitoring work progress and planning for risks and contingencies
- reference surfaces, projection planes and coordinate systems for geodetic components
- industry-accepted techniques for survey control
- standard survey plan design and presentation conventions
- appropriate persons:
 - client
 - colleague
 - end user
 - engineer
 - manager
 - registered or qualified surveyor.

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:
 - as specified in the performance evidence, including PPE
- specifications:
 - organisational policies, procedures and documentation relating to work health and safety
 - survey specifications, including relevant plans and drawings
- relationships with team members and supervisor:
 - working in a team.

Links

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