



Australian Government

Department of Education, Employment and Workplace Relations

CPPSIS4009A Collect and set out basic surveying data

Release: 1

CPPSIS4009A Collect and set out basic surveying data

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to collect and set out basic surveying data. It requires the ability to plan and execute the collection and set out operation, in a team environment, often in the lead role. Functions would be carried out under limited supervision and within organisational guidelines.

Application of the Unit

Application of the unit

This unit of competency supports the application of organisational, communication and problem-solving skills, and a sound understanding of technology. The skills and knowledge acquired upon completion of this unit would apply to the needs of employees in supporting positions for surveying and mapping.

Licensing, legislative, regulatory and certification requirements may impact on this unit. Incorporate these requirements according to state, territory and federal legislation.

Licensing/Regulatory Information

Refer to Application of the Unit

Pre-Requisites

Prerequisite units Nil

Employability Skills Information

Employability skills The required outcomes described in this unit of competency contain applicable facets of employability skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged, will assist in identifying employability skills requirements.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency. Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

- | | |
|---|--|
| 1 Gather basic surveying data. | 1.1 <i>Equipment</i> is operated according to manufacturer specifications and organisational guidelines .
1.2 Data and attributes are collected according to the provided data collection plan .
1.3 Any discrepancy between specifications and actual activities are identified, recorded and reported.
1.4 Administrative and industry requirements for data collection are complied with and recorded.
1.5 OHS requirements are adhered to.
1.6 Skills and knowledge are updated to accommodate changes in equipment and operations. |
| 2 Finalise the collection process. | 2.1 All required documentation is completed according to the organisational requirements.
2.2 All data collection is completed according to organisational requirements.
2.3 Measurements are validated and recorded according to the project specifications . |
| 3 Set out basic surveying data. | 3.1 Basic engineering surveying data is set out according to data collection plans.
3.2 Any discrepancies between the data collection plan and the actual activities are identified, recorded and reported to relevant personnel . |

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- ability to relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities
- analytical skills to determine the data requirements of the survey project
- communication skills to:
 - discuss vocational issues effectively with colleagues
 - impart knowledge and ideas through oral, written and visual means
- computer skills (technical user level) to complete business documentation

REQUIRED SKILLS AND KNOWLEDGE

- literacy skills to:
 - assess and use workplace information
 - interpret and understand legal, financial and procedural requirements
 - process workplace documentation
 - read, record data and write technical reports
 - research and access routine sources of spatial data
- numeracy skills to:
 - analyse errors
 - record and interpret statistics
 - record with accuracy and precision
 - undertake computations
- organisational skills to:
 - prepare and administer documentation
 - prioritise activities to meet contractual requirements
- self-management skills
- spatial skills to:
 - collect and set out basic survey data accurately
 - perform spatial data archival and retrieval
 - solve basic problems relating to height, depth, breadth, dimension, direction and position in actual operational activity and virtual representation
 - understand implications of height, depth, breadth, dimension and position to actual operational activity and virtual representation
- work effectively as part of a team.

Required knowledge and understanding:

- accuracy and precision requirements (basic)
- data recording and reduction (basic)
- limitations of equipment (basic)
- map projections
- organisational policies and guidelines
- safe work practices
- range of basic surveying data capture and data set out methodologies
- spatial reference systems
- survey control requirements
- surveying equipment for data capture and data set out
- surveying computations
- surveying data handling
- surveying reference systems.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for this Training Package.

Overview of assessment

This unit of competency could be assessed on its own or in combination with other units relevant to the job function, for example units CPPSIS4010A Operate surveying equipment, and CPPSIS4011A Perform surveying computations.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of:

- ensuring that accuracy has been attempted in:
 - basic measurements
 - basic reporting and documentation
 - basic survey data reduction and manipulation
 - basic resource planning
 - interpretation of basic design information to identify the components to be measured
- matching objectives with resources.

Specific resources for assessment

Resource implications for assessment include access to:

- assessment instruments, including personal planner and assessment record book
- assignment instructions, work plans and schedules, policy documents and duty statements
- registered training provider of assessment services
- relevant guidelines, regulations and codes of practice
- suitable venue and equipment.

Access must be provided to appropriate learning and assessment support when required.

Where applicable, physical resources should include equipment modified for people with disabilities.

Context of assessment

Holistic: based on the performance criteria, evidence guide, range statement, and required skills and knowledge.

Method of assessment

Demonstrated over a period of time and observed by the assessor (or assessment team working together to conduct the assessment).

Demonstrated competency in a range of situations, that may include customer/workplace interruptions and involvement in related activities normally experienced in

the workplace.

Obtained by observing activities in the field and reviewing induction information. If this is not practicable, observation in realistic simulated environments may be substituted.

Guidance information for assessment

Assessment requires that the clients' objectives and industry expectations are met. If the clients' objectives are narrowly defined or not representative of industry needs, it may be necessary to refer to portfolio case studies of a variety of spatial information services requirements to assess competency.

Oral questioning or written assessment and hypothetical situations (scenarios) may be used to assess underpinning knowledge (in assessment situations where the candidate is offered a preference between oral questioning or written assessment, questions are to be identical).

Supplementary evidence may be obtained from relevant authenticated correspondence from existing supervisors, team leaders or specialist training staff.

All practical demonstration must adhere to the safety and environmental regulations relevant to each State or Territory.

Where assessment is for the purpose of recognition (recognition of current competencies [RCC] or recognition of prior learning [RPL]), the evidence provided will need to be authenticated and show that it represents competency demonstrated over a period of time.

In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge.

Assessment processes will be appropriate to the language and literacy levels of the candidate and any cultural issues that may affect responses to the questions, and will reflect the requirements of the competency and the work being performed.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording in the performance criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

- Equipment*** may include:
- global positioning system (GPS)
 - level
 - tape.
- Manufacturer specifications*** may include:
- equipment specifications
 - operator manuals.
- Organisational guidelines*** may include:
- code of ethics
 - company policy
 - legislation relevant to the work or service function, including equal employment opportunity (EEO)
 - manuals
 - OHS policies and procedures
 - personnel practices and guidelines outlining work roles and responsibilities.
- Data*** may:
- include data from:
 - echo sounder
 - GPS
 - level
 - photogrammetry
 - remote sensing
 - total station
 - relate to:
 - depth
 - dimension
 - direction
 - height
 - position.
- Attributes*** are properties associated with an entity and may include:
- colour
 - layer
 - level
 - line type

- line width
- text.
- Data collection plans** may include:
 - computer-based data
 - field recordings.
- OHS** may include:
 - Australian standards
 - development of site safety plan
 - identification of potential hazards
 - inspection of work sites
 - training staff in OHS requirements
 - use of personal protective clothing
 - use of safety equipment and signage.
- Required documentation** may include:
 - electronic or paper-based correspondence with client
 - field records
 - final report
 - records of conversation
 - survey plots
 - organisational work activity sheets.
- Measurements** may include use of:
 - current meter
 - echo sounder
 - GPS
 - level
 - photogrammetry
 - remote sensing
 - tape
 - tide gauge
 - total station.
- Project specifications** refer to:
 - detailed technical descriptions of the survey data and its requirements.
- Relevant personnel** may include:
 - managers
 - site personnel, such as field hands
 - supervisors
 - surveyors.

Unit Sector(s)

Unit sector

Spatial information services

