



Australian Government

Department of Education, Employment and Workplace Relations

CPPSIS4010A Operate surveying equipment

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to operate surveying equipment for basic measurements, recording and calculating horizontal and vertical information, and directing team activity. It requires technical ability in the use of equipment, as well as an understanding of how to use it, to satisfy key task requirements. 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 Plan the survey task.	<p>1.1 Task <i>objectives</i> and principal work activities are defined.</p> <p>1.2 <i>Pertinent standards</i> are identified, considered and adhered to.</p> <p>1.3 Plans for team activity are put into place.</p> <p>1.4 Skills and knowledge are updated to accommodate changes in operating environment and equipment.</p>
2 Execute the task.	<p>2.1 Identified survey components are measured.</p> <p>2.2 Measured survey data is reduced for comparison with design.</p> <p>2.3 <i>Measurements</i> are validated and recorded according to the <i>project specifications</i>.</p> <p>2.4 Checks are completed according to <i>organisational documented and undocumented practices</i>.</p> <p>2.5 Team activity is monitored according to plan.</p> <p>2.6 <i>OHS</i> requirements are planned for and adhered to.</p>
3 Finalise the task.	<p>3.1 All required documentation is completed according to <i>organisational guidelines</i>.</p>

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:

- and with a range of physical and mental abilities
- ability to use basic instruments
- analytical skills to determine the technological requirements of a 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
- literacy skills to:
 - assess and use workplace information
 - interpret and understand legal, financial and procedural requirements

REQUIRED SKILLS AND KNOWLEDGE

- 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 with accuracy and precision
 - undertake computations
- organisational skills to:
 - prepare and administer documentation
 - prioritise activities to meet contractual requirements and immediate needs pertaining to the use of surveying equipment
- self-management skills
- spatial skills to:
 - 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
- team leadership.

Required knowledge and understanding:

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

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 CPPSIS4009A Collect and set out basic surveying data, and CPPSIS4011A Perform surveying

	computations.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>A person who demonstrates competency in this unit must be able to provide evidence of:</p> <ul style="list-style-type: none"> • matching objectives with resources • ensuring that accuracy has been attempted in: <ul style="list-style-type: none"> • basic measurements • basic reporting and documentation • basic survey data reduction and manipulation • basic resource planning • directing teams • interpretation of basic design information to identify the components to be measured.
Specific resources for assessment	<p>Resource implications for assessment include access to:</p> <ul style="list-style-type: none"> • 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. <p>Access must be provided to appropriate learning and assessment support when required.</p> <p>Where applicable, physical resources should include equipment modified for people with disabilities.</p>
Context of assessment	Holistic: based on the performance criteria, evidence guide, range statement, and required skills and knowledge.
Method of assessment	<p>Demonstrated over a period of time and observed by the assessor (or assessment team working together to conduct the assessment).</p> <p>Demonstrated competency in a range of situations, that may include customer/workplace interruptions and involvement in related activities normally experienced in the workplace.</p> <p>Obtained by observing activities in the field and reviewing induction information. If this is not practicable, observation in realistic simulated environments may be substituted.</p>
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.

Objectives may include:

- agreed client requirements
- written survey data specifications.

Pertinent standards are standards essential to the accuracy of:

- basic measurement
- calculation of horizontal and vertical information
- data recording.

Measurements may include use of:

- current meter
- echo sounder
- global positioning system
- level
- photogrammetry
- remote sensing
- tape
- tide gauge
- total station.

Project specifications refer to:

- detailed technical descriptions of the survey data and its requirements.

Organisational documented and undocumented practices may include:

- appropriate timelines
- data processing requirements
- final product formats
- formal design parameters
- communication protocols
- activity protocols for teamwork.

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.

Organisational guidelines

- code of ethics
- company policy

may include:

- 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.

Unit Sector(s)

Unit sector

Spatial information services