



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **CPCCCM1011A Undertake basic estimation and costing**

**Release: 1**

## **CPCCCM1011A Undertake basic estimation and costing**

### **Modification History**

Not Applicable

### **Unit Descriptor**

**Unit descriptor** This unit of competency specifies the outcomes required to estimate materials, labour and time requirements and establish costs for a basic construction project.

### **Application of the Unit**

**Application of the unit** This unit supports the attainment of basic understanding and application of construction estimating and costing.

### **Licensing/Regulatory Information**

Not Applicable

### **Pre-Requisites**

**Prerequisite units** Nil

## Employability Skills Information

**Employability skills**      This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

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Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Gather information.	<p>1.1.Details of project requirements are obtained from <i>information</i> supplied for <i>planning and preparation</i> of <i>estimating and costing</i>.</p> <p>1.2.Details of products and services to be provided are compiled.</p> <p>1.3.Delivery point and methods of transportation are determined where necessary.</p> <p>1.4.Details are recorded in accordance with enterprise practice.</p>
2. Estimate materials, time and labour.	<p>2.1.Types, quantities and <i>quality requirements</i> of <i>materials</i> required for the construction project are estimated, including meeting <i>environmental requirements</i>.</p> <p>2.2.Labour requirements to achieve construction outcomes and/or perform required services are estimated.</p> <p>2.3.Time requirements to construct and/or perform required services are estimated.</p>
3. Calculate costs.	<p>3.1.Total materials, labour and overhead cost allowances are calculated in accordance with enterprise procedures.</p> <p>3.2.Total job cost is calculated, including overheads and mark-up percentages.</p> <p>3.3.Final cost is calculated.</p>
4. Document details and verify where necessary.	<p>4.1.Details of costs and charges are documented in accordance with enterprise practice.</p> <p>4.2.Costs, calculations or other details are verified in accordance with enterprise practice.</p> <p>4.3.Details are documented for future reference in accordance with enterprise practice.</p>

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills

## **REQUIRED SKILLS AND KNOWLEDGE**

Required skills for this unit are:

- communication skills to:
  - determine requirements
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - follow instructions
  - read and interpret:
    - documentation from a variety of sources
    - drawings and specifications
  - report faults
  - use language and concepts appropriate to cultural differences
  - use and interpret non-verbal communication, such as hand signals
  - written skills to record details of project, including costs and charges
- numeracy skills to apply calculations
- organisational skills, including the ability to plan and set out work
- teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities.

### **Required knowledge**

Required knowledge for this unit is:

- construction materials
- construction terminology
- costing techniques and procedures
- job safety analysis (JSA) and safe work method statements
- labour rates and overheads
- material sizes
- plans, specifications and drawings
- processes for calculating material requirements
- quality requirements
- workplace and equipment safety requirements.

# Evidence Guide

## EVIDENCE GUIDE

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

### Overview of assessment

This unit of competency could be assessed in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques fully replicate construction workplace conditions, materials, activities, responsibilities and procedures.

### 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 the ability to:

- locate, interpret and apply relevant information, standards and specifications
- comply with site safety plan and OHS legislation, regulations and codes of practice applicable to workplace operations
- comply with organisational policies and procedures, including quality requirements
- safely and effectively use tools and equipment
- communicate and work effectively and safely with others
- document and communicate work-related information, including work orders, specifications, products, materials and labour requirements, costing calculations for products, materials and labour, and special conditions for a specified construction project
- estimate and cost a specified project, including:
  - estimate quantities of material required
  - determine types and amount of labour required to complete the work
  - estimate time required to complete the work
  - estimate overheads associated with the project.

### Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements

## EVIDENCE GUIDE

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and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- realistic tasks or simulated tasks covering the mandatory task requirements
- relevant specifications and work instructions
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry related systems information.

Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.

### Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

## EVIDENCE GUIDE

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- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

## Range Statement

### RANGE STATEMENT

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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, if used in the performance criteria, is detailed below. 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) may also be included.

***Information*** includes:

- diagrams or sketches
- instructions issued by authorised organisational or external personnel
- manufacturer specifications and instructions



## RANGE STATEMENT

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	<ul style="list-style-type: none"> <li>where specified</li> <li>material safety data sheets (MSDS)</li> <li>memos</li> <li>organisation work specifications and requirements</li> <li>plans and specifications</li> <li>relevant Australian standards</li> <li>safe work procedures related to carrying out basic estimation</li> <li>signage</li> <li>verbal or written and graphical instructions</li> <li>work bulletins</li> <li>work schedules.</li> </ul>
<b><i>Planning and preparation</i></b> include:	<ul style="list-style-type: none"> <li>gathering and basic analysis of project plans and specifications</li> <li>confirmatory work site inspection and determination of work requirements.</li> </ul>
<b><i>Estimation and costing</i></b> includes:	<ul style="list-style-type: none"> <li>overhead allowances</li> <li>labour and materials</li> <li>use of calculators and/or computers running appropriate software for estimating and calculating necessary details.</li> </ul>
<b><i>Quality requirements</i></b> include:	<ul style="list-style-type: none"> <li>internal company quality policy and standards</li> <li>manufacturer specifications, where specified</li> <li>relevant regulations, including Australian standards</li> <li>workplace operations and procedures.</li> </ul>
<b><i>Materials</i></b> for estimation and job costing include:	<ul style="list-style-type: none"> <li>bagged materials</li> <li>bricks</li> <li>building elements, such as roof trusses, lining materials, flooring materials, prefabricated elements, boxed, drummed and tinned materials</li> <li>other sheet materials applicable to construction</li> <li>reconstituted timber products</li> <li>sand</li> <li>soil and aggregates</li> <li>timber.</li> </ul>
<b><i>Environmental requirements</i></b> include:	<ul style="list-style-type: none"> <li>clean-up management</li> <li>waste management.</li> </ul>

## **Unit Sector(s)**

**Unit sector** Construction

## **Co-requisite units**

**Co-requisite units** Nil

## **Functional area**

**Functional area**