Australian Government

Department of Education, Employment and Workplace Relations

CPCMCM7001A Plan and manage complex projects

Release: 1

CPCMCM7001A Plan and manage complex projects

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency specifies the outcomes required of senior managers responsible for identifying, planning, controlling and finalising complex projects. The unit addresses the management of projects of significant scope and duration, for example, the development and implementation of a major new program or service, or the construction or design of a significant new piece of infrastructure. The environment in which the project is managed is also complex and involves the management of a project team which typically will include staff with diverse skill sets. The management of complex projects also involves significant reporting requirements. Licensing, legislative, regulatory or certification requirements may apply to this unit and so the varying state or territory requirements should be confirmed with the relevant body.

Application of the Unit

Application of the unit	This unit supports the attainment of skills and knowledge required for competent workplace performance in organisations of all sizes. It will support managers in all sectors of the construction industry who must exercise the skills necessary to ensure projects are planned and managed effectively in order to deliver the required outcomes on time and within budget. The unit may be contextualised to the specific needs, and skills and knowledge requirements, of all sectors within the construction industry provided the essential outcomes of the unit are not changed.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units	Nil

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

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. Identify the strategic and operational needs of the project during the planning phase.	1.1. The project's ***strategic context*** and requirements are identified and considered. 1.2. The organisation's strategic and business plans and their output requirements are identified and considered. 1.3. Client requirements and the impact of ***legislation and industry codes and standards*** are identified and fully explored. 1.4. A ***risk management analysis*** is conducted and a risk management plan is developed and documented.
2. Prepare the project plan.	2.1. Precise ***specifications and terms of reference*** for the project are defined and documented. 2.2. Project budget is identified, specified to a level that can be used for the management of sub-tasks, and documented. 2.3. Skills needed for the successful completion of the project are defined. 2.4. Physical and other resources required to support the project are defined, documented and secured. 2.5. Timelines, schedules and critical path for the project are developed and documented, taking into consideration contingencies and planning for time slippages. 2.6. A consultation strategy or process that will be used to inform clients, contractors and other interested parties of the project's progress, and seek their input as required, is defined and documented.
3. Assemble the project team and commence work.	3.1. Appropriate project team members are secured and briefed regarding the project, their roles, levels of delegated responsibility and the outcomes to be achieved. 3.2. Effective communication processes are put in place to coordinate work and inform team members of progress. 3.3. Clear reporting processes for team members are identified and communicated.
4. Manage the project.	4.1. Project progress is monitored according to project plan requirements, using appropriate ***project management tools*** and methodologies. 4.2. Team members are supported and their output is managed against the key performance indicators

ELEMENT	PERFORMANCE CRITERIA
	identified in the project plan. 4.3. Corrections, changes and additions are made to the project plan in light of changing circumstances to ensure project aims and outcomes are met. 4.4. Resourcing to support the project is monitored and corrections are made to reflect changing circumstances. 4.5. Reporting of overall project progress is made to senior management and/or funding bodies as required and in line with the project plan.
5. Finalise the project.	5.1. The project is finalised in line with the project plan. 5.2. Required handover to staff members responsible for the ongoing implementation or maintenance of project products or services is conducted efficiently, effectively and in line with organisational procedures. 5.3. Project team members and relevant stakeholders are debriefed about the conduct of the project and the outcomes achieved. 5.4. A report is prepared analysing the strengths and weaknesses of the project plan and the conduct of the project.
6. Use the project to contribute to improved policies and processes.	6.1. Opportunities for wider organisational learning, including changes to processes or policies generated by the project, are identified and analysed. 6.2. Opportunities for future further developments following project completion are forwarded for consideration by senior management. 6.3. The strategic impact of the project is considered and fed into the organisation's ongoing strategic planning processes.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• project planning and execution

REQUIRED SKILLS AND KNOWLEDGE

- risk management planning
- time management
- high level written and oral communication
- human resource management
- team leadership
- numeracy skills for budgeting and financial management
- proactive thinking
- decision making
- high level problem solving
- research
- critical and analytical thinking
- comparative analysis
- operating computer software packages and systems, including:
  - word processing
  - spreadsheet
  - email
  - internet
- skills specific to fire systems design, including:
  - operating computer software packages and systems, including:
    - proprietary project management software
    - proprietary hydraulic calculation software
    - proprietary estimating software
    - parametric modelling software
  - language and literacy skills for:
    - searching, accessing, reading, interpreting and applying current relevant legislation, codes and standards
    - updating knowledge of products, software systems and technology
    - reading and interpreting drawings, plans and specifications, including architectural, structural, mechanical, hydraulic and electrical
    - researching and evaluating competing technologies in new products and systems
    - reviewing and commenting on reports (e.g. consultant fire engineer), including building, insurance and corporate

Required knowledge

- budgets and financial plans
- concepts of risk management planning and processes
- tools and models of project management
- reporting mechanisms
- relevant legislation, codes, standards, and sustainability requirements and ratings,

REQUIRED SKILLS AND KNOWLEDGE

including:

- energy conservation
- water conservation

- organisational frameworks and functions, including:
  - industry associations
  - enterprises
  - government bodies
- knowledge specific to fire systems design, including:
  - fire engineering principles, including:
    - engineered solutions
    - innovative fire systems
    - fire modelling
  - roles and responsibilities of relevant building project personnel, including:
    - architect
    - lead contractor
    - mechanical engineer
    - hydraulic engineer
    - electrical engineer
  - computer software functions and operation, including relevant proprietary software
  - relevant current legislation, codes and standards, including:
    - building Acts
    - building regulations
    - infrastructure supply regulations
    - the Building Code of Australia
    - Australian standards for fire systems
    - international standards for fire systems
    - other fire system standards commonly required by building insurers
  - passive fire safety elements:
    - identification of passive elements
    - impact of fire systems design on passive elements
    - specifications required to safeguard integrity of passive fire element performance where penetrations are necessitated by the fire systems design
  - water-based fire systems technology and components, including:
    - wet pipe sprinkler systems
    - deluge and drencher systems
    - dry pipe sprinkler systems
    - pre-action sprinkler systems

REQUIRED SKILLS AND KNOWLEDGE

- early suppression fast response (ESFR)
- hydrants, hose reels and monitors
- water supply tanks
- fire pump sets

- detection and warning systems technology and components, including:
  - emergency warning and intercommunications systems (EWIS)
  - fire detection and alarm systems
  - smoke control systems
  - emergency lighting systems
- technology and components of special hazard fire systems, including:
  - foam systems (low expansion, medium expansion and high expansion)
  - gaseous agent systems (carbon dioxide, inert gas and halocarbon gases)
  - water spray systems (deluge, medium/high velocity water spray and high speed deluge)
- chemical systems' technology and components, including:
  - powder
  - wet chemical

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, 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 the simulated or project-based assessment fully replicates workplace conditions, materials, activities, responsibilities and procedures. This unit could be assessed as an activity involving the management of a complex project and should include establishing, using and evaluating effective project management processes.
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 required skills and knowledge specified within this unit. In particular the person should demonstrate: • the successful design, implementation, management and finalisation of a complex project, including the management of planning processes, scheduling, human resources, reporting and response to contingencies • the ability to ensure projects undertaken are aligned with and support organisational strategies and requirements • the ability to learn from project outcomes and refine and improve future project management processes.
Context of and specific resources for assessment	Assessment of essential underpinning knowledge may be conducted in an off-site context. It is to comply with relevant regulatory or Australian standards' requirements. Resource implications for assessment include: • access to codes and standards • access to legislation relevant to the jurisdiction and the project being undertaken • project documentation, including design or

EVIDENCE GUIDE	
	project brief, drawings, specifications, construction schedules and other supporting documents • research resources, including product information and data • theoretical texts and other information to support the assessment of the unit's required skills and knowledge • relevant computer software packages and suitable hardware.
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.
Guidance information for assessment	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. 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.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT	
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.	
The ***strategic context*** for the project will include the operating environment in which the project will be conducted. For example:	• fire systems design sector, including the development of high risk and high value fire systems design projects.
Legislation and industry codes and standards that may impact on the project design and delivery will be sector specific. For the fire systems design sector they may include:	• building Acts • building regulations • infrastructure supply regulations • the Building Code of Australia • Australian standards for fire systems • international standards for fire systems • other fire system standards commonly required by building insurers, including the U.S. National Fire Protection Association (NFPA) standards.
Risk management analysis may include consideration of:	• public liability • safety of staff • workers compensation claims • business continuity (e.g. emergency plans for activities to continue in the event of loss of building, equipment or systems) • property development and maintenance • changing government policy or funding arrangements • environmental concerns (e.g. pollution, hazardous waste, tree retention policies).
Specifications and terms of reference for the project may include an accurate and complete:	• definition of the project aims • description of the outcomes to be achieved using, wherever possible, the nomination of clear metrics • description of all stakeholders • description of the project parameters (scope of operations, flexibilities involved, etc.) • identification of the budget • specification of the timescale • specification of the communication strategy to be used.

RANGE STATEMENT	
Project management tools typically will be computer-based and may:	• be in-house or proprietary software • use critical path analysis • incorporate the use of Gantt or PERT charts • incorporate scheduling and reporting templates.

Unit Sector(s)

Unit sector	Common

Co-requisite units

Co-requisite units	Nil

Competency field

Competency field	Senior management