



Australian Government

Department of Education, Employment and Workplace Relations

MEM22007A Manage environmental effects of engineering activities

Release: 1

MEM22007A Manage environmental effects of engineering activities

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers examining environmental issues and determine environmental strategies associated with engineering work.
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Application of the Unit

Application of the unit	<p>This unit applies to a variety of environmental management techniques, including taking inventory of existing environmental condition, documenting/reporting initial assessment, determine and document/report stakeholder's expectations for improvements on initial condition against possibilities for improvement; developing, evaluating&ranking strategies for sustainable development; implementing, monitoring&evaluating strategies; applying environmental management techniques to a new or existing product, process, system or service.</p> <p>This unit only has application in qualifications that are not points based.</p> <p>Band: 0</p> <p>Unit Weight: 0</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM16006A	Organise and communicate information

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine the existing environmental condition	1.1. Research, debate and report on case studies involving examination of environmental values. 1.2. Prepare an inventory of the existing environmental condition. 1.3. Record/report on the findings of the initial assessment.
2. Establish stakeholders' expectations	2.1. Determine expectations regarding each component of the environment. 2.2. Record and report on expectations for project/operation integration.
3. Review existing environmental conditions against stakeholders' expectations	3.1. Determine variations between expectations and the existing environmental conditions. 3.2. Establish the possibilities and options for improvement in the environment.
4. Develop and rank strategies to achieve sustainable development	4.1. Evaluate available options against assessment criteria to identify risks and priorities. 4.2. Develop an environmental report on strategies to implement the preferred options.
5. Implement strategies to achieve sustainable development	5.1. Implement strategies in consultation with appropriate stakeholders. 5.2. Collect and review data on implementation of strategies. 5.3. Evaluate progress and review strategies.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Look for evidence that confirms skills in:

- undertaking debate on environmental values
- reporting on case studies involving examination of environmental values
- producing inventory of existing environmental conditions

REQUIRED SKILLS AND KNOWLEDGE

- documenting the findings of the initial environmental assessment
- identifying stakeholders' environmental expectations
- integrating environmental expectations with the overall outcomes of the operation/project
- communicating expected outcomes to stakeholders
- documenting variations between expected and current environmental status
- implementing strategies for improving the environmental outcomes of the project/operation
- evaluating available options
- implementing selected sustainable development options
- developing environmental management plans
- monitoring the implementation of the environmental management plan
- collecting environmental data
- reviewing and evaluating implementation strategies

Required knowledge

Look for evidence that confirms knowledge of:

- environmental conditions of the workplace/process/ operation/procedure
- the procedures for documenting environmental conditions
- applicable environmental legislation and regulations
- the legislative/regulatory reporting and recording requirements
- the tests and testing procedures required to establish environmental conditions
- stakeholders' views on specific options for environmental improvement
- opportunities for integrating project/operation outcomes with environmental improvement options
- variations between expected and current environmental status
- options for improving the environmental status of the project/operation
- the costs/benefits of the identified options
- the concept of sustainable development
- options for sustainable development
- criteria for assessing the feasibility of available options
- the risks and priorities associated with sustainable development
- strategies to implement sustainable development options
- the procedures for communicating sustainable development options to stakeholders
- strategies to implement environmental development plans
- the data necessary to evaluate the implementation of the environmental management plan
- procedures for collecting and documenting environmental data
- benchmarks against which implementation strategies can be evaluated

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

A person who demonstrates competency in this unit must be able to manage the environmental effects of engineering activities. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

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

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with managing the environmental effects of engineering activities or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

EVIDENCE GUIDE**Guidance information for assessment****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, 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.

Environmental values

Biophysical values eg. clean air, soil, water, biodiversity, ecosystem sustainability, sustaining the quality of natural and artificial environments, both indoor and outdoor Socio cultural values

Existing environmental conditions

Identification of environmental relations - mapping all the relations that will be used and affected by a particular activity in both space and time, analysing the resulting relational map for areas of intense impact, especially as a result of cumulative impacts; identification of physical, socio-cultural and economic conditions for life and for the existing or desired quality of life, identification of the socio-cultural values placed on the current environmental conditions; identification of both the negative and positive environmental impacts, the potential de-sustaining and sustaining aspects of the activity; identification of where engineering interventions and follow-up are possible

Environmental report

A description of the state of the environment, an assessment of the nature and consequence of impacts, identifiable trends, available and recommended actions, identification of responsibilities and potential change agents, cost of action; a critical review of the parameters of the environmental relations considered, the criteria by which they were evaluated, the process of

RANGE STATEMENT

	developing responses and the achievement of the actions taken
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Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Management and organisation
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