



Australian Government

Department of Education, Employment and Workplace Relations

MEM22005A Manage engineering operations

Release: 1

MEM22005A Manage engineering operations

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers managing a number of processes to ensure adequate resourcing, programming and maintenance for operations.
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Application of the Unit

Application of the unit	This unit applies to managing engineering operations in accordance with a business plan. Activities may include process monitoring, process element compatibility review, documentation review; developing work programs and schedules for provision of resources, maintenance and purchase of new plant and equipment; monitoring and documenting condition of plant and equipment, performance diagnosis, energy&resource efficiency; instigating performance improvement related to cost, process variations, documentation and environmental effects. This unit only has application in qualifications that are not points based. Band: 0 Unit Weight: 0
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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. Carry out a range of ongoing technical processes	1.1. Monitor and manage the operation(s) 1.2. Monitor and manage costs. 1.3. Review the interaction of related processes. 1.4. Ensure adequate documentation of the process.
2. Develop work programs and schedules	2.1. Identify the required human resources and physical resources for all aspects of the ongoing process. 2.2. Schedule maintenance and system review activities. 2.3. Schedule purchasing and renewal requirements.
3. Monitor the condition of plant and resources	3.1. Inspect and monitor plant/resources operation. 3.2. Document condition monitoring. 3.3. Diagnose performance problems. 3.4. Develop an energy and resource minimisation plan.
4. Take corrective action as required to improve the process	4.1. Identify critical areas for performance improvement. 4.2. Alter the process/system to ensure that variation is controlled and faults rectified. 4.3. Seek feedback from relevant others on the effectiveness of the process improvements. 4.4. Document alterations to the process and communicate these to customers/stakeholders.
5. Monitor environmental performance	5.1. Conduct regular environmental audits of processes/procedures and systems.

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: • monitoring operations • monitoring related processes • documenting technical processes • procuring new/replacement plant and equipment

REQUIRED SKILLS AND KNOWLEDGE

- inspecting and monitoring plant and resources
- documenting condition monitoring results
- diagnosing performance problems
- minimising energy and resource usage
- identifying critical areas of process performance improvement
- modifying processes to control variation and rectify faults
- collecting feedback on process performance and process alterations
- documenting alterations to the process
- conducting environmental audits
- developing and implementing environmental management plans

Required knowledge

Look for evidence that confirms knowledge of:

- the procedures for measuring process performance
- the impact of variations in process performance on the achievement of the organisation's objectives
- issues relating to waste management, recycling and the environment
- the interaction of the technical process with other related processes
- the recording and reporting requirements associated with the technical process
- procedures for documenting and communicating variations to the technical process
- the resource requirements of the process in terms of the process requirements
- process for review of maintenance procedures and scheduling
- maintenance strategies
- procedures for reviewing system performance
- opportunities to improve system performance through revised maintenance schedules/activities
- process of preparing and maintaining plant and equipment procurement schedules
- the life expectancy of existing plant and equipment
- the costs and benefits of repair/maintenance versus replacement
- the procedures for procuring new/replacement plant and equipment
- the authority responsible for approving the procurement of new/replacement plant and equipment
- the specifications of the plant, resources and process output
- the procedures for checking process performance against specification
- the type(s) of plant condition monitoring associated with the process
- the reasons for selecting the chosen condition monitoring methods
- the procedures for recording condition monitoring results
- the analysis of condition monitoring results
- proposed improvements to plant, equipment and/or maintenance strategies/schedules

REQUIRED SKILLS AND KNOWLEDGE

- the costs/benefits of the proposed improvements
- the delegated authority responsible for approving remedial action
- the procedures for implementing remedial action
- opportunities to minimise the use of energy and resources
- the benefits of minimising energy and resources
- the impact of minimising energy and resource usage on process outputs and contractual arrangements
- opportunities for performance improvement
- the reasons for the priorities assigned to the performance improvement opportunities
- the costs/benefits of identified performance improvement opportunities
- faults in the process and/or variations outside specification
- the action(s) to be taken to overcome faults/ variations
- the procedures for documenting alterations to the process
- delegated authority responsible for approving alterations to the process
- the procedures for communicating details of alterations to customers and stakeholders
- the environmental impacts of the process, procedures and systems with respect to:
 - energy usage
 - waste management
 - water conservation
 - materials conservation
 - workplace environmental conditions and risks
- environmental reporting requirements and structures
- strategies for minimising the environmental impacts of the process, procedures and 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, 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 engineering operations. 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 engineering operations 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.

Costs

Ongoing costs within the business and to the management of cost within a specific engineering project. Cost estimation and control are essential areas of business management that will require an application of engineering expertise.

Human resources

People employed through awards, contracts or subcontracts and may include professionals, para-professionals, trade and non-qualified.

Monitor

May at times include taking corrective actions to maintain or enhance performance. May also require continual monitoring to ensure that correct operations are performed and that all equipment is functioning to the required standards

Plant and resources

May include operational plant, electrical/civil/mechanical

Unit Sector(s)**Unit sector**

Co-requisite units

Co-requisite units		

Competency field

Competency field	Management and organisation
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