



Australian Government

MEM22017A Coordinate continuous improvement and technical development

Release: 1

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Modification History

Release 1 - New unit. Replaces MEM22008A, but not equivalent.

Unit Descriptor

This unit of competency covers the skills and knowledge required to coordinate continuous improvement and ongoing technical development activities for engineering-related operations or projects. It includes feasibility studies, proposals for the introduction of technology or process change and development of implementation strategy, costing and budgets relating to proposals.

Application of the Unit

This unit applies to people with delegated coordination and facilitation responsibilities for implementing engineering-related continuous improvement change and technical development within organisations.

It does not cover design or implementation of major change, such as re-engineering or design and commissioning of new major plant. It is suitable for people working in engineering or related environments in design, maintenance or in operational functions.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

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.

Elements and Performance Criteria

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| 1 | Evaluate project or operations for improvement and technical development opportunities | 1.1 | Select project or operation for review in conjunction with stakeholders |
| | | 1.2 | Determine current performance of operations or projects against objectives and key performance indicators (KPIs) |
| | | 1.3 | Establish and monitor processes to identify shortfalls in performance and root causes |
| | | 1.4 | Establish and monitor processes to identify possible opportunities for performance and technical improvements |
| | | 1.5 | Evaluate hardware and software technology requirements for performance improvement opportunities |
| | | 1.6 | Evaluate personnel skill requirements and training needs for performance improvement opportunities |
| | | 1.7 | Confirm current or future work health and safety (WHS) requirements, codes of practice, regulations, standards and regulatory requirements related to possible opportunities for performance improvement |
| 2 | Develop recommendations for performance improvement and technical | 2.1 | Coordinate the specification of options for performance improvement, including required technology changes, skills development needs, timelines, budget and extent of disruption to current operations |
| | | 2.2 | Coordinate feasibility analyses on options and develop |

	development		firm proposals
		2.3	Prepare report and recommendations, including objectives, implementation schedule, budget and any required regulatory compliance measures
		2.4	Communicate and negotiate with stakeholders to confirm recommendations for change and technological developments
3	Coordinate implementation of approved changes	3.1	Develop implementation objectives, plan, schedule and budgets for approved changes
		3.2	Monitor implementation of objectives by priority, strategy and schedule
		3.3	Coordinate change management, process redesign and introduction of technology
		3.4	Manage physical and financial resources and budget within delegation
		3.5	Monitor change and technological development for compliance with organisational policies and procedures
		3.6	Assist with risk management procedures
4	Report outcomes	4.1	Record progress and results in accordance with procedures
		4.2	Provide documentation, data entry and analysis, as required

Required Skills and Knowledge

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

Required skills

Required skills include:

- identifying current objectives and performance measures
- identifying change and development opportunities
- evaluating technologies, plant and other assets, hardware and software used by current operations and projects
- identifying skills, knowledge and techniques for operations or projects
- completing feasibility analyses on options and developing of proposals
- maintaining relevant records of plans, priorities, schedules and progress, legislative compliance, personal and team skills development, and sources of technical information and resources
- setting and coordinating priorities, strategy and schedule for changes, including introduction of new technology and continuous improvement operational changes
- problem solving and decision making, systems thinking, constraints and contingency management, short-term planning adjustments, and rescheduling physical and financial resources and budget within delegation
- communicating and negotiating with stakeholders, team members, support function groups, expert technical and professional assistance, customers and suppliers
- monitoring change and technological development for compliance with regulatory requirements
- reporting and documenting progress and results, data and analysis in accordance with procedures

Required knowledge

Required knowledge includes:

- project management techniques
- modern production management techniques
- context of operations, such as competitive pressures or markets, customer-supplier relationships, regulatory and industrial environment, environmental and sustainability, and resourcing and labour issues
- operations or project management structure, functional team relationships, responsibilities and delegations across the organisation, available technical and professional support services, communications and reporting lines
- procedures for audit of technologies, skills, knowledge and techniques, plant and other assets, including hardware and software used by current operations and projects

- feasibility analysis or ‘trade-off’ methods to assist selection from among options
- accountability and record keeping requirements in accordance with organisational procedures
- tendering and contract requirements and processes and their effect on continuous improvement, including agreement on design and specification, negotiations and optimisations, provisions for variations, delays and penalties
- change and technological development implications for WHS requirements, codes of practice, regulations, standards and regulatory requirements related to proposed changes and technologies
- sustainability issues related to continuous improvement of engineering-related projects and operations
- typical software for program management and budget control, use and validation options
- implementation plan, strategic and prioritised objectives and budgets
- procedures for reporting and recording of progress and records of legislative compliance in accordance with procedures for accountability against objectives, schedule and budget
- requirements for and functions of technical documentation, graphics and specifications and records of meetings, communications and agreements with stakeholders

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 review an existing engineering-related operation or project, including current context and performance objectives, and to identify and implement continuous improvements and technical developments. This includes working individually and in a team environment and recognising and complying with normal control procedures on engineering projects.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently: • evaluate technologies, assets, workforce and contractor skills and knowledge, personnel development strategies, hardware and software technology requirements, for technology and capability gaps and opportunities for improvement • review organisation structure, current operations and context, development opportunities, budgets and constraints, software options for opportunities for improvement • complete feasibility analyses on options and develop proposals • maintain appropriate documentation and records • demonstrate systems thinking, constraints and contingency management, short-term planning adjustments and rescheduling • manage physical and financial resources and budget within delegation • communicate and negotiate with stakeholders • report and document progress and results, data and analysis in accordance with procedures.
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 then a simulated working environment 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. • Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. • Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with

	disabilities.
Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of the MEM05 Metal and Engineering Training Package. • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge. • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure correct interpretation and application. • Assessment may be applied under project-related conditions (real or simulated) and require evidence of process. • Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • Assessment may be in conjunction with assessment of other units of competency where required.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

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.

Stakeholders	Stakeholders may include: • enterprise or project owners and managers • team members • support function groups • expert technical and professional assistance • customers and suppliers • colleagues identified in reporting arrangements for the engineering project or operation
Systems thinking	Systems thinking refers to the conduct of engineering work in a manner that demonstrates knowledge of how the interaction of different technical systems on equipment, machinery or structures, as well as the skills and techniques of personnel, combine to perform or support engineering-related operations, processes or

	projects. It embraces determining or establishing how the function of each technical system or component, as well as the skills and techniques of personnel, effects or potentially may effect, outcomes. Systems should be interpreted broadly within the context of the organisation and depending on the project or operation can include equipment, related facilities, material, software, internal services and personnel, and other organisations in the value chain
Constraints and contingencies	Constraints and contingencies may include: • financial • organisational, procedural or cultural • physical constraints, such as limits to resources, limits to site access or logistical limitations
Organisational policies and procedures	Organisational policies and procedures may include formal policy documents, operational procedures, mission statements, training manuals, orders, production schedules, safety instructions and notices, and may reference: • enterprise agreements and awards • WHS requirements • codes of practice and other legislative requirements • environmental and social obligations • ethical practice
WHS, regulatory requirements and enterprise procedures	WHS, regulatory requirements and enterprise procedures may include: • WHS Acts and regulations • relevant standards • codes of practice from Australian and overseas engineering and technical associations and societies • risk assessments • registration requirements • safe work practices • state and territory regulatory requirements
Standards and codes	Standards and codes refer to all relevant Australian and international standards and codes applicable to the engineering project or operation
Continuous improvement implementation	Continuous improvement implementation may relate to plant, products, processes, systems or services, including design, development, implementation or manufacture, commissioning, operation or delivery and maintenance. Improvement processes may include techniques, such as: • balanced scorecard

	• current and future state mapping • measuring performance against benchmarks • process improvement, problem solving and decision making • data management, generation, recording, analysing, storing and use of software • training for improvement systems participation • technical training
Sustainability	Sustainability is used to mean the entire sustainable performance of the organisation/plant, including: • meeting all regulatory requirements • conforming to all industry covenants, protocols and best practice guides • minimising ecological and environmental footprint of process, plant and product • maximising economic benefit of process plant and product to the organisation and the community • minimising the negative WHS impact on employees, community and customer
Lean principles	Lean manufacturing uses cost, capacity and responsiveness, quality, reliability and waste minimisation as drivers of the process and measures for process improvement. Lean manufacturing is the response of many organisations to local, regional, national and global market competitiveness

Unit Sector(s)

Competency field

Unit sector Management and organisation

Custom Content Section

Not applicable.