



Australian Government

MEM22012A Coordinate resources for an engineering project or operation

Release: 1

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Modification History

Release 1 - New unit. Replaces MEM22003A, but not equivalent.

Unit Descriptor

This unit of competency covers the coordination of resources in accordance with operations or project plans and budgets formulated to meet business goals and strategic objectives.

Application of the Unit

This unit applies to engineering projects or operations that have a significant engineering component. It is suitable for people with responsibility for resources and those pursuing technical qualifications and careers at engineering technician level.

Prior or concurrently developed experience in mathematics, computer packages and file handling, engineering plant, facilities and services, materials, methods and processes is required.

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

1	Contribute to operations or project planning and budgeting	1.1	Participate in policy and procedures development
		1.2	Review sustainability implications of resources, sourcing, processing, process waste, transport, distribution, life cycle and disposal
		1.3	Participate in planning for operations or project resourcing in the context of operations, project, strategic and business plans
		1.4	Participate in development of budgets
		1.5	Participate in development of performance indicators or parameters, monitoring and continuous improvement processes
		1.6	Participate in the development of resources information distribution and control systems, including the use of software systems
2	Evaluate supply chain relations	2.1	Identify supply value chain members and contribution to project or operation
		2.2	Assess supply agreements, quality and delivery parameters against performance indicators
		2.3	Employ value analysis of product or customer service costs
		2.4	Assess tender and contract documents for risk
		2.5	Assess supply chain communications for feedback on quality, supply chain efficiency and continuous

improvement processes

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| 3 | Coordinate physical resources | 3.1 | Assess physical resource requirements and develop a resources distribution schedule consistent with the budget |
| | | 3.2 | Coordinate efficient utilisation of physical resources |
| | | 3.3 | Ensure compliance with work health and safety (WHS), regulatory and risk management requirements with particular emphasis on handling and use of resources |
| 4 | Contribute to project or operation human resources management | 4.1 | Identify labour and skills requirements based on assessment of timetable and project or operational requirements |
| | | 4.2 | Program and communicate labour and skills to satisfy project or operational technical and budget requirements |
| | | 4.3 | Organise labour and skill schedules to facilitate training |
| | | 4.4 | Contribute to skills development and training arrangements |
| 5 | Contribute to budget development and control | 5.1 | Participate in developing budgets in the context of business and strategic operations or project plans |
| | | 5.2 | Control delegated expenditure and cash flow |
| | | 5.3 | Record resources utilisation and costs, including those for maintenance of assets |
| 6 | Supervise and review resources delivery | 6.1 | Apply systems thinking, constraints and contingency management, and continuous improvement techniques |
| | | 6.2 | Monitor and review supply chain and coordinate continuous improvements |
| | | 6.3 | Monitor physical and human resources and performance indicators and coordinate continuous improvement processes |
| | | 6.4 | Monitor budget and coordinate response to threats |

- 6.5 Monitor sustainability and coordinate responses in accordance with sustainability policy and procedures
 - 6.6 Monitor information and resources control system and implement continuous improvement
 - 6.7 Employ software packages to achieve information handling, data processing, planning and control objectives
- 7 Report and document resources coordination
 - 7.1 Report in accordance with procedures
 - 7.2 Maintain documentation on planning, supply chain analysis, resources requirements analysis, budgets, delivery, continuous improvement and training, WHS and regulatory requirements, and risk assessment

Required Skills and Knowledge

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

Required skills

Required skills include:

- participating and communicating with others
- negotiating and seeking consensus in support of strategic objectives
- evaluating:
 - supply chain, quality, delivery and capability
 - tender and contracting processes and documents
- coordinating physical and human resources
- coordinating and controlling resource budgets
- monitoring, reviewing and improving resources delivery
- planning for operations or project resourcing in the context of operations, project, strategic and business plans
- participating, cooperating and negotiating required for dealing with customers, contractors, designers and production management
- determining take off quantities for 'bill of materials' from drawings, specifications and contracts
- reporting and documenting objectives, key performance indicators, timetables and progress

Required knowledge

Required knowledge includes:

- typical sustainability implications for engineering projects or operations
- systems thinking, constraints and contingency management, and continuous improvement techniques
- procedures for preparing and monitoring project plans, business plans and budgets
- cost planning, cost-benefit analysis, life cycle costing, valuation and cost estimation procedures
- procedures for assessing implications of design on project implementation costs or manufacturability of product and maintainability of plant and process
- resources information distribution and control systems, including the use of enterprise resource planning (ERP) and materials resource planning (MRP) software
- planning and cost control software
- supply and value chain evaluation techniques, including contract, quality and delivery parameters
- engineering-related operating procedures associated with the use of resources

- financial impact of a variety of maintenance strategies on overall costs on typical tenders, contracts and law of contract provisions, relevant to engineering projects or operations
- ability to calculate quantities from drawings, specifications and contracts
- WHS requirements, including WHS Acts and regulations
- resources expenditure and cash flow control procedures
- procedures and requirements of financial records, including records of resources and costs for maintenance of assets

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 coordinate resources for an engineering project or operation within project plans and budgets. This includes working individually and as part of a team 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: • participate, communicate, cooperate and negotiate strategic objectives, policy and procedures development • evaluate supply chain, quality, delivery, capability, tender and contracting processes and documents • coordinate and control physical and human resources and resource budgets • monitor, review and improve resources delivery • report and document resource planning and use.
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.

Participate	Participation includes the requirement to communicate, cooperate, negotiate and work with others in accordance with the operations or project plans
Software packages	Software packages may include: • spreadsheets • databases • word processor • presentation • project management and cost control • system control and data acquisition (SCADA), MRPII, MRPIII and ERP
Value analysis	Value analysis is the determination of value-added, as defined by the ultimate customer at each step in the supply chain or production process or service provision. The value is often specified in contract documentation in terms of quality, cost, quantity and delivery schedule
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
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
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
Manage constraints and contingencies	Contingencies arising during operations or improvement projects are responded to in the context of constraints. Contingencies may threaten operations or improvement projects and planning for contingencies may be essential to maintain resources, skilled labour and schedules. Each contingency will have constraints on possible solutions. These may be: • financial, organisational, procedural or cultural constraints • physical constraints, such as limits to resources, limits to site access or logistical limitations
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
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Unit Sector(s)

Competency field

Unit sector Management and organisation

Custom Content Section

Not applicable.