Australian Government

MEM234027 Plan and manage materials supply for an engineering project or manufacturing operation

Release: 1

MEM234027 Plan and manage materials supply for an engineering project or manufacturing operation

Modification History

Release 1. Supersedes and is equivalent to MEM234027A Plan and manage materials supply for an engineering project or manufacturing operation.

Application

This unit of competency defines the skills and knowledge required to plan and manage all aspects of the supply of materials to an engineering project or manufacturing operation. This includes managing supplier identification and negotiations, purchasing and scheduling, including the interpretation of client, design, marketing, sales and production requirements to enable matching to available resources, budgets, workforce and contractors. It also includes the control of processes, physical resources, workforce skills and resources to enable the use of assets within budget requirements.

This unit applies to people who require significant engineering skills and knowledge. Typical applications would include situations that involve:

- many material inputs, major assembly lines or manufacturing cells such as whitegoods and vehicle manufacturing
- heavy and light fabrication involving significant use of material
- requirements to either determine, select or interpret technical specifications and standards for purchasing, scheduling and production planning.

The unit can support technical support training where the planning, scheduling and purchasing is done in an engineering or manufacturing organisation following lean principles. In this situation it is recommended that the unit be co-delivered with the appropriate competitive systems and practices units from the MSS Sustainability Training Package.

Individuals completing this work either already have or are developing skills and experience in personal and digital communication, self-directed and group activities, planning and scheduling, performance analysis, process control and improvement, along with an understanding of technology, skills and techniques, and quality aspects of operations.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Engineering science

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential *outcomes.*	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Identify and verify production or fabrication requirements	1.1 Identify parameters, context and objectives of project or operation 1.2 Verify that key stakeholders, labour and skills distribution, information and reporting channels and operational procedures are appropriate for project or operation objectives 1.3 Review operations planning and management and confirm compatible scheduling, purchasing and production control measures 1.4 Confirm reporting and technical support arrangements 1.5 Verify facilities, services, plant, tooling and software, process layout and use of automation are appropriate to product manufacturability 1.6 Confirm that compliance requirements of work health and safety (WHS) regulations, codes of practice, standards, risk assessment and registration requirements for manufacturing plant are observed
2. Develop the production or project plan	2.1 Participate in development of demand forecast 2.2 Prepare production or project plan in consultation with relevant stakeholders to meet quality, demand and delivery timelines within capacity and budget constraints 2.3 Manage preparation of purchasing schedules based on scope of project or operation 2.4 Manage or assist in preparation of production schedules within scope of own job role 2.5 Develop contingency arrangements suited to production parameters 2.6 Review final proposals with relevant stakeholders 2.7 Develop key performance indicators (KPIs) for materials supply
3. Implement the plan	3.1 Delegate responsibilities for purchasing and detailed scheduling and communicate priorities and key performance indicators (KPIs) 3.2 Manage materials and product flow and transfer operations, buffer and emergency stocks, warehousing, stores and logistics 3.3 Coordinate quality and process control procedures 3.4 Coordinate and monitor physical, human and financial resources and budget to achieve production plan 3.5 Communicate and maintain information and reporting procedures, and participate, cooperate and negotiate with relevant stakeholders 3.6 Co-ordinate continuous improvement, problem-solving and

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	decision-making, address systems constraints and contingencies, adjust short-term planning and reschedule, as necessary
4. Monitor operational performance	4.1 Review actual materials supply against key performance indicators (KPIs) 4.2 Contribute to review of manufacturing operations against plan and other key performance indicators (KPIs) 4.3 Participate in continuous improvement procedures implemented in the organisation 4.4 Review options and implementation of software options including enterprise resource planning (ERP), supervisory control and data acquisition (SCADA) and spreadsheets 4.5 Contribute to risk management procedures and system maintenance in accordance with organisational procedures 4.6 Report progress against plan in accordance with organisational procedures 4.7 Provide required documentation, data entry and analysis

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.	

Production includes:	• operations requiring major engineering input and significant coordination of suppliers, purchasing and scheduling including:
	  • major engineering input
	  • significant coordination of suppliers, purchasing and scheduling
	  • volume production of components or full items including

	whitegoods, vehicles, transformers and transport equipment • jobbing production • on-site fabrication of engineering-related items.
Parameters, context and objectives of operations include:	• customer requirements • stock levels • production capacity and availability • labour requirements and availability • supplier capacity • warehousing, stores and logistics.
Stakeholders include:	• team • organisation functional groups or teams • supervisors with approval delegation • customers and suppliers • external individuals or organisations.
WHS, regulatory requirements and organisational procedures include:	• WHS acts, regulations and relevant standards • industry codes of practice • risk assessments • registration requirements • safe work practices • state and territory regulatory requirements.
Legal obligations of businesses include those related to:	• contract law • commercial law • company law • fair trading act and consumer protection • environmental planning and assessment • Commonwealth and state/territory tax laws • industrial law which deals with employee and employer relationships, awards and agreements, trade unions, and their powers and rights • WHS acts and regulations.
Records of operations include:	• tenders, contracts and schedules • personnel • resource allocations • financial management procedures • standard operating procedures (SOPs), including maintenance procedures • WHS committee minutes and actions, risk management and mitigation • documentation and records of current safe work method statements (SWMS), safety data sheets (SDS) and work permits • standards, codes of practice, audits and meetings • communications, graphics and specifications.

Continuous improvement implementation includes:	• changes to plant, products, processes, systems or services, including design, development, implementation or manufacture, commissioning, operation or delivery and maintenance
	• one or more of the following techniques:
	  • 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.

Constraints and contingencies include one or more of the following:	• financial
	• organisational, procedural or cultural
	• physical constraints including:
	  • limits to resources
	  • limits to site access
	  • logistical limitations.

Software and validation include:	• planning, scheduling, and performance analysis and modelling • enterprise resources planning (ERP), supervisory control and data acquisition (SCADA) and spreadsheets where underpinning program techniques and algorithms should be understood • comparison of traditional solutions for simple design problems with software solutions to the same design problems • review of previously implemented design challenges which were completed using the software.

Unit Mapping Information

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Links

Companion Volume Implementation Guides are available on VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2