



Australian Government

Department of Education, Employment and Workplace Relations

MEM30014A Apply basic just in time systems to the reduction of waste

Release: 1

MEM30014A Apply basic just in time systems to the reduction of waste

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers reviewing and making continuous improvements to an existing Just in Time (JIT) production system in manufacturing.
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Application of the Unit

Application of the unit	<p>This unit applies to all types of manufacturing and engineering environments, most likely in a team setting. All work is carried out under supervision.</p> <p>Band: 0</p> <p>Unit Weight: 0</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

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. Identify potential to eliminate waste in the current system	1.1. Value chain members are identified. 1.2. Principles of waste elimination are applied to each step in the value chain. 1.3. Current storage/inventory in value chain is analysed for excesses. 1.4. Production lead time is analysed for all components, sub-assemblies and assemblies subject to JIT including potential for set up time reductions. 1.5. Kanban cards and flow authorisation indicators are analysed for appropriate quantity. 1.6. Workplace layout is analysed for flow and application of housekeeping principles. 1.7. Production process is analysed for excess rework and scrap.
2. Draft workable procedures to implement improvements to JIT system	2.1. Key internal stakeholders are liaised with to develop solutions to JIT issues. 2.2. Key external members of the value chain are liaised with to develop solutions to JIT issues. 2.3. Key measures for improvements are determined. 2.4. The plan is referred to a higher authority for approval in accordance with policy and procedures.
3. Implement the JIT system/improvements	3.1. The JIT system/improvements are implemented according to workplace procedures. 3.2. Key measures of JIT are monitored. 3.3. Regular liaison is conducted with key stakeholders seeking areas for improvement.

Required Skills and Knowledge

<p>REQUIRED SKILLS AND KNOWLEDGE</p> <p>This section describes the skills and knowledge required for this unit.</p>
<p>Required skills</p>
<p>Look for evidence that confirms skills in:</p> <ul style="list-style-type: none"> • analysing • communicating

REQUIRED SKILLS AND KNOWLEDGE

- negotiating
- reading/interpreting/following information on written job instructions, specifications, standard operating procedures and other applicable reference documents
- planning and sequencing operations

Required knowledge

Look for evidence that confirms knowledge of:

- JIT manufacturing philosophy
- push and pull systems
- Kanbans
- work cells
- set up time reduction techniques
- group technology
- ABC analysis of inventory
- principles of TQM
- principles of TPM
- hazards and control measures associated with applying basic JIT systems to the reduction of waste
- safe work practices and procedures

Evidence Guide

EVIDENCE GUIDE	
<p>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.</p>	
Overview of assessment	<p>A person who demonstrates competency in this unit must be able to apply basic JIT systems to the reduction of waste.</p>
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>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.</p>
Context of and specific resources for assessment	<p>This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, i.e. 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 would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with applying basic JIT systems to the reduction of waste or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
Method of assessment	<p>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 should not require language, literacy and numeracy skills beyond those required in this unit. 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.</p>
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.

Value chain	Includes the entire production system, beginning with the customer, and includes the sales outlet, product design, processing and supply
Waste	<ul style="list-style-type: none"> • Includes activities and results to be eliminated within manufacturing • Categories of waste include excess production and early production, waiting, materials queuing, not moving, people not working, transporting, double handling, poor process design, inventory, stores, buffers, lot sizes, inefficient performance of a process, reaching, bending, exertion, making defective items, rework, rejects, unnecessary inspection
JIT	<ul style="list-style-type: none"> • Includes a production scheduling concept that calls for any item needed at a production operation - whether raw material, finished item, or anything in between, to be produced and available precisely when needed • JIT systems may also be known as part of other manufacturing systems such as lean manufacturing, agile manufacturing or similar
Kanban	<ul style="list-style-type: none"> • Includes a card or sheet used to authorise production or movement of an item • Kanban is typically applied to batch type operations and the production is measured in units produced. In continuous manufacturing organisations, production is measured in terms of production rate
Flow authorisation indicator	May include Kanban bin, ticket or similar, or may be some other indicator of demand pull

RANGE STATEMENT	
Housekeeping principles	<p>Principles of 5S which refer to the five Japanese words seiri, seiton, seison, seiketsu, shitsuke. These words are shorthand expressions for principles of maintaining an effective, efficient workplace:</p> <ul style="list-style-type: none"> • seiri - eliminating everything not required for the work being performed • seiton - efficient placement and arrangement of equipment and material • seison - tidiness and cleanliness • seiketsu - ongoing, standardised, continually improving seiri, seiton, seison • shitsuke - discipline with leadership
Key measures	<ul style="list-style-type: none"> • May include inventory levels, lead time, delivery, productivity/ production rate, set up time, other measures of pull through the value chain, quality, rework, scrap rates • Pull system refers to a manufacturing planning system based on actual real-time needs from sales or equivalent - i.e. 'make what we sell'

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units	

Competency field

Competency field	Engineering technician
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