



Australian Government

Assessment Requirements for MEM14091 Integrate manufacturing fundamentals into an engineering task

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM14091A Integrate manufacturing fundamentals into an engineering task.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- communicating, cooperating and negotiating with stakeholders to achieve manufacturing integration task
- determining task parameters and context and identifying and investigating required manufacturing fundamentals
- identifying relevant work health and safety (WHS), regulatory and risk management requirements and organisational procedures
- integrating manufacturing fundamentals to achieve task objectives on at least two occasions
- selecting and using software and graphics for required analysis and graphics
- reviewing sustainability implications, functions and features for the engineering task
- reporting and documenting results on at least two occasions.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures
- WHS and regulatory requirements, codes of practice, and risk minimisation and registration requirements
- manufacturing methods including:
 - production control and flow
 - continuous improvement
 - lean techniques for quality, speed, quantity and reliability
 - manufacturing systems maintenance including total productive maintenance
 - jobbing, batch and mass systems

- production lines and work cells, and batch and queue manufacturing
- sources of professional and technical assistance
- functions and features of production machinery and systems related to the task
- general mechanical, electrical and mechatronic engineering fundamentals relevant to manufacturing including:
 - materials properties
 - mechanics
 - chemistry
 - thermodynamics
 - fluid mechanics
 - fluid power
 - electrical fundamentals
- systems thinking, problem-solving and decision-making, and continuous improvement methods
- current options and trends in software including manufacturing process simulation software
- constraints on the integration of manufacturing fundamentals into an engineering task
- sustainability considerations
- lean principles.
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Assessment Conditions

- Assessors must:
 - have vocational competency in integrating manufacturing fundamentals into an engineering task at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions that cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required including relevant workplace procedures, product and manufacturing specifications.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate
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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>