



Australian Government

Assessment Requirements for MEM234013

Plan and design engineering-related manufacturing processes

Release: 1

Assessment Requirements for MEM234013 Plan and design engineering-related manufacturing processes

Modification History

Release 1. Supersedes and is equivalent to MEM234013A Plan and design engineering-related manufacturing processes.

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:

- interpreting features of product and processing options and parameters of the brief or contract
- planning and designing engineering-related manufacturing processes
- advising client, based on discipline knowledge and work health and safety (WHS) and regulatory standards
- establishing budget and control measures and designing schedule within design project control plan
- researching planning and design parameters on at least two occasions
- determining sustainability, WHS, regulatory and risk management requirements
- investigating faults in existing manufacturing process designs and proposing solutions
- reviewing engineering manufacturing process requirements on at least two occasions
- modelling and calculating using appropriate software and validation techniques
- generating solutions and evaluating feasibility against design criteria
- incorporating maintenance management, human resources (HR), information management and continuous improvement systems
- implementing systems thinking, continuous improvement, and constraint and contingency management options
- communicating, negotiating and reviewing with stakeholders and client throughout the process to obtain agreement on proposal and sign-off on design
- documenting design with required drawings, specifications and instructions.

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:

- advanced and current manufacturing process design methodologies
- appropriate technical and professional assistance

- brief parameters
- standardisation techniques
- economic, social and sustainability implications
- market competitiveness factors
- lean manufacturing principles
- automated design tools
- project planning, scheduling and control techniques including budgeting and costing
- characteristics of, and differences between, jobbing, flexible and mass production, and continuous process
- implications of maintenance management and human resource systems for engineering-related planning processes
- production information flow required for and from a manufacturing process
- regulatory environment requirements, applicable standards and codes of practice
- WHS and regulatory requirements, codes of practice, standards and registration requirements
- process design documentation, drawings, specifications and instructions
- techniques for:
 - continuous improvement
 - problem-solving and decision-making
 - root cause analysis (RCA) or failure mode and effects analysis (FMEA) or design review based on failure mode (DRBFM), and Pareto analysis.

Assessment Conditions

- Assessors must:
 - have vocational competency in planning and designing engineering-related manufacturing processes 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 available on VETNet -

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