



Australian Government

Assessment Requirements for MEM234007 Design fluid power systems

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM234007A Design fluid power systems.

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 fluid power systems and parameters of the brief or contract
- advising client based on discipline knowledge, work health and safety (WHS) and regulatory standards
- researching trends and techniques in fluid power system design
- determining work health and safety (WHS), regulatory and risk management requirements
- investigating and presenting options for fluid power design on at least two occasions
- investigating faults in existing designs and proposing solutions
- measuring, modelling, calculating, analysing and using software and validation techniques including 2D and 3D modelling
- generating and evaluating solutions for feasibility against design criteria
- designing optimum fluid power system solution on at least two occasions
- communicating, negotiating and reviewing with stakeholders and client throughout the process to obtain agreement on proposal and sign-off on design
- documenting design with drawings, circuit diagrams, 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:

- Australian Standards relevant to fluid power systems
- fluid power design methods
- current options and trends in:
 - design and performance analysis
 - modelling and simulation software
 - program and software validation techniques
- research and investigations methods
- brief or contract parameters
- sustainability considerations

- 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
- principles of fluid power designs
- dimensions, capacity and position of system components
- system responsiveness
- electrical and mechanical behaviours of fluid power systems
- hydraulics and designing with hydraulics components
- applications and characteristics of servo valves
- electronic controllers for proportional and servo valves
- sensors, transducers and amplifiers
- pneumatics and designing with pneumatic components
- multiple actuator control circuits
- compressed air system design
- WHS and regulatory requirements, codes of practice, standards, risk minimisation and registration requirements.

Assessment Conditions

- Assessors must:
 - have vocational competency in designing fluid power systems 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>