



Australian Government

**Assessment Requirements for MEM23052
Apply basic electro and control scientific
principles and techniques in aeronautical
engineering**

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Modification History

Release 1. Supersedes and is equivalent to MEM23052A Apply basic electro and control scientific principles and techniques in aeronautical engineering.

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:

- selecting and applying appropriate basic electro and control scientific principles to aeronautical engineering situations
- selecting appropriate basic electro and control techniques and associated technologies, software and hardware to suit specified applications on at least two occasions
- applying and manipulating appropriate formulas for applications involving engineering calculations
- checking validity of equations using dimensional analysis and referring solutions to the original aim of the application
- reporting on solutions in appropriate units, using significant figures on at least two occasions
- reporting on limitations of solutions, due to assumptions, scientific principles and techniques used 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:

- basic concepts and principles of aeronautical engineering
- sources of information
- electro and control scientific principles
- limitations of selected basic scientific principles
- skills required to complete tasks
- basic electro and control techniques and related technologies, software and hardware associated with implementing scientific principles in aeronautical engineering solutions
- limitations of basic techniques and associated technologies, software and hardware
- applicability and limitations of basic electro and control scientific principles
- applicability and limitations of basic electro and control and associated technologies, software and hardware

- appropriateness of calculations
- fundamental and derived quantities
- common systems of units
- procedure for converting between systems of units
- common prefixes used with units and their values
- procedure for carrying out dimensional analysis
- concept of significant figures
- uncertainty of computations based on experimental data
- procedures for determining the significance of figures in calculations
- procedures for estimating errors in derived quantities.
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Assessment Conditions

- Assessors must:
 - have vocational competency in applying basic electro and control scientific principles and techniques in aeronautical engineering situations 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>