



Australian Government

MEM234030 Provide specialised technical and engineering guidance to other technical employees

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM234030A Provide specialised technical and engineering guidance to other technical employees.

Application

This unit of competency defines the skills and knowledge required to provide technical advice, including mentoring, to other technical and paraprofessional employees, usually but not always, working in the same technical field or discipline.

It applies across all forms of manufacturing and engineering where an individual is using their professional skills and knowledge to provide engineering and technical guidance to other technical employees within the organisation. Examples of technical guidance situations include acting as a technical resource person to other technical employees or teams or mentoring of other technical employees because of specialised skill and knowledge.

The emphasis in this unit is on the provision of technical advice usually as part of day-to-day operations where the person is not in a formally designated managerial or leadership role. The unit assumes technical competence to Advanced Diploma of Engineering level or equivalent industrial experience.

Where formal leadership and management of engineering and related projects or operations applies, unit MEM234001 Plan and manage engineering-related projects or operations should also be selected.

Where the management of the installation, commissioning or modification of machines or equipment is required, unit MEM234031 Manage installation, commissioning or modification of machines and equipment should also be selected.

Where the management of fluid power technologies is required, unit MEM234032 Manage fluid power related technologies in an organisation should also be selected.

Where leading engineering-related quality operations is required, unit MEM234033 Lead engineering-related quality operations in an organisation should also be selected.

This unit does not cover the giving of general advice associated with conditions of employment including career planning and wages.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Engineering science

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Respond to requests for technical advice or assistance	1.1 Confirm that request for assistance is of an engineering nature and the engineering-related outcomes required 1.2 Identify extent of engineering information currently known 1.3 Define issue or problem in engineering-related terms 1.4 Identify whether request is within own discipline and skills and knowledge or should be referred to other expert technical or professional assistance 1.5 Assist individuals or technical team to identify stakeholders to engineering issues and practice in the organisation 1.6 Assist individuals or team to identify constraints and solution steps 1.7 Verify solution
2. Identify other situations where current practice may be inadequate within the department or team	2.1 Identify technical, engineering or sustainability-related risk factors in workplace 2.2 Identifies risks associated with professional and ethical practice, work health and safety (WHS) and other statutory responsibilities and liabilities 2.3 Identify risk situations without adequate preventative and contingency planning 2.4 Identify technical individuals or teams responsible for management of risks without adequate preventative and contingency planning 2.5 Offer assistance and advice to resolve inadequacy in accordance with organisational procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.	
Expert technical and professional assistance includes:	• technical support and advice relating to elements which have intrinsic dangers • professional support for technologies • professional advice on issues that can overlap with: • finance, accounts and tax • insurance and legal • training and HR.
WHS requirements, codes of practice, regulations, standards and other regulatory requirements and organisational procedures include:	• WHS acts, regulations and relevant standards • industry codes of practice • risk assessments • registration requirements • safe work practices • state and territory regulatory requirements.
Legislative requirements include:	• industrial law and awards • consumer protection law • restrictive trade practice • environmental protection • workers compensation • equality and antidiscrimination • contract law.
Sustainability issues include:	• consideration of economic, social, ecological and resources implications of activities • resources and energy: • sources, access, processing and consumption • food security and agriculture, health, education and shelter • land, energy and water • social and economic factors affecting design of machines and equipment • life cycle design of product (manufacture to re-manufacture or recycle) • raw material, solids and hazardous waste, and production by-products • contamination of land, air and stormwater pollutants, and discharge to sewerage • climate change.
Planning and scheduling techniques include:	• critical path or Pert network plans • Gantt charts.

Software and validation techniques include:	• software employed for performance analysis and modelling including program techniques and algorithms and the use of failure effects analysis (FEA) and numerical methods within object-oriented modelling techniques • comparison of traditional solutions for simple design problems with software solutions to the same design problems • review of previously implemented design challenges which were completed using the software.
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Unit Mapping Information

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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>

Assessment Requirements for MEM234030 Provide specialised technical and engineering guidance to other technical employees

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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:

- identifying engineering-related situations that require referral for expert assistance
- identifying and establishing any risks or consequences for advice offered
- offering advice that takes into account the engineering operations and procedures of the organisation, work health and safety (WHS) requirements, the discipline area, and accepted engineering ethical practice, on at least two occasions
- identifying situations where modelling, calculations or other investigations should occur before advice is offered
- applying verification procedures to engineering solutions in own area of expertise on at least two occasions
- assisting individuals and teams in setting performance targets
- advising on budgeting and financial management of engineering activities 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:

- principles of engineering as applied by designers in own area of expertise
- normal planning and scheduling approaches to engineering operations and tasks
- relationship of levels of practice in own engineering discipline including situations where professional engineering, engineering technologist and engineering associate assistance or decision-making is appropriate
- situations where mathematics, including statistics, calculus or other advanced mathematics, must be used by to generate solutions to engineering problems, as well as situations where professional or other expert assistance should be accessed
- structure, roles and capabilities of the engineering workforce in the organisation
- interactions between engineering technologies and business operations, including impact of engineering on meeting client, employee, shareholder, regulatory and community expectations of the organisation

- regulatory and WHS responsibilities of technical and engineering workforce of the organisation
- administrative, human resources (HR) and other support services available to technical and engineering staff in the organisation.
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Assessment Conditions

- Assessors must:
 - have vocational competency in providing specialised technical and engineering guidance 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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