



Australian Government

**MEM30008 Apply basic economic and
ergonomic concepts to evaluate engineering
applications**

Release: 1

MEM30008 Apply basic economic and ergonomic concepts to evaluate engineering applications

Modification History

Release 1. Supersedes and is equivalent to MEM30008A Apply basic economic and ergonomic concepts to evaluate engineering applications.

Application

This unit of competency defines the skills and knowledge required to apply basic concepts of economics and ergonomics to evaluate an engineering application prior to production.

The unit applies to engineering or related activities and is suitable for people giving technical support in manufacturing or engineering operations and those pursuing technical qualifications and careers at paraprofessional or technician level. All work is carried out under supervision.

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

Pre-requisite Unit

Nil

Competency Field

Engineering technician

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. Prepare requirements from information provided	1.1 Follow standard operating procedures (SOPs) and comply with work, health and safety (WHS) requirements 1.2 Obtain criteria for the engineering application
2. Verify that requirements have been met in the engineering application criteria	2.1 Review the engineering application criteria against customer requirement and note deficiencies 2.2 Apply knowledge of engineering parameters to evaluate criteria 2.3 Verify use of appropriate and relevant standards and codes
3. Verify specifications	3.1 Assess the relationships between quality, cost of production and

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
in accordance with economic and ergonomic principles	function 3.2 Check the specifications and verify for health effects of human/machine interaction
4. Develop and seek approval of recommendations	4.1 Develop recommendations based on all data considerations 4.2 Refer all recommendations to a supervisor for approval in accordance with policy and 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.

Engineering application includes:	<ul style="list-style-type: none"> • assisting in engineering processes and applications requiring ergonomic and economic knowledge • skills including: <ul style="list-style-type: none"> • design • engineering assessments • supervision of installation and commissioning.
Engineering parameters include:	<ul style="list-style-type: none"> • consideration of safety of personnel • consequences of failure (human injury) • economic considerations • production cost • quality of product consideration • material reliability and choice • design safety factors • maintenance • energy consumption

	<ul style="list-style-type: none"> • source of spares or service.
Standards and codes include:	<ul style="list-style-type: none"> • AS Doc 3000N Notes on Changes in the SAA Wiring Rules • AS 4100 Steel structures • AS 3990 Mechanical equipment - Steelwork • AS/NZS ISO 45001 Occupational health and safety management systems • AS 1100.101 Technical drawing - General principles • International Organization for Standardization (ISO).
Economic principles include:	<ul style="list-style-type: none"> • production quantities (mass and batch) • cost of manufacture • ease of manufacture • use of standardised components • human capacity (reach, dexterity, strength, repetitiveness and human comfort) • aesthetics • health effects of human/machine interaction • safety.
Ergonomic principles include:	<ul style="list-style-type: none"> • designing • installing or checking things for effective human use • creating environments that are suitable for human living and work • work methods • equipment • facilities • tools that influence the worker's motivation • fatigue • likelihood of sustaining an occupational injury or illness • productivity.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM30008A Apply basic economic and ergonomic concepts to evaluate engineering applications.

Links

Companion Volume Implementation Guides are available on VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>