



Australian Government

Assessment Requirements for MARL061 Perform basic marine engineering calculations

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- assessing own work outcomes and maintaining knowledge of current codes, standards, regulations and industry practices
- explaining basic mathematical concepts and techniques relevant to engineering
- identifying and determining appropriate mathematical techniques and formula to solve engineering problems
- identifying the methods and procedures needed to select mathematical techniques and formula to solve engineering problems
- imparting knowledge and ideas through verbal, written and visual means
- performing accurate and reliable calculations
- performing calculations relevant to engineering, including volumes and masses of regular and irregular areas
- reading and interpreting written information on engineering problems and expressing this information in mathematical terms
- solving problems using appropriate laws and principles
- using a calculator to resolve engineering problems.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- calculations, including:
 - algebra
 - calculations with positive and negative integers
 - graphs
 - indices
 - mensuration
 - simplifying expressions
 - trigonometry
- centre of gravity (CG), longitudinal centre of gravity (LCG) and vertical centre of gravity

(VCG)

- centroids of area
- formulae for areas, volumes and masses of regular and irregular shapes
- indices
- Law of Logarithms
- proportions, variation, percentages, averages and method of unity
- Pythagoras' Theorem.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

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.

Practical assessment must occur in a workplace, or realistic simulated workplace, under the normal range of workplace conditions.

Simulations and scenarios may be used where situations cannot be provided in the workplace or may occur only rarely, in particular for situations relating to emergency procedures and adverse weather conditions where assessment would be unsafe, impractical or may lead to environmental damage.

Resources for assessment must include access to:

- applicable documentation, such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- tools, equipment, machinery and materials currently used in industry.

Links

Companion Volume implementation guide can be found in VetNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>