



Australian Government

Assessment Requirements for MARL009 Perform basic marine engineering calculations

Release: 1

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Modification History

Release 1. New unit of competency.

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 marine engineering, and
- identifying and determining appropriate mathematical techniques and formula to solve marine engineering problems
- identifying the methods and procedures needed to select mathematical techniques and formula to solve marine engineering problems
- imparting knowledge and ideas through verbal, written and visual means
- performing accurate and reliable calculations
- performing calculations relevant to marine engineering, including volumes and masses of regular and irregular areas
- reading and interpreting written information on marine engineering problems and express this information in mathematical terms
- solving problems using appropriate laws and principles
- using a calculator to resolve marine 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:

- centre of gravity (CG), longitudinal centre of gravity (LCG), 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 satisfy National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) assessor requirements.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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.

Resources for assessment must include access to:

- tools, equipment, machinery, materials and personal protective equipment currently used in industry
- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- range of relevant exercises, case studies and/or simulations.

Links

Companion Volume implementation guides are found in VETNet -

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