

Title	Demonstrate and apply knowledge of mechanical engineering planning		
Level	5	Credits	15

Purpose	People credited with this unit standard are able to: demonstrate knowledge of principles of structured planning; demonstrate knowledge of key features of the planning process; and analyse mechanical engineering tasks and formulate solutions using planning principles and network analysis tools.
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Classification	Mechanical Engineering > Applied Principles of Mechanical Engineering
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Available grade	Achieved
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Entry information	
Recommended skills and knowledge	Unit 21775, <i>Demonstrate knowledge of mathematical principles for mechanical engineering</i> ; and Unit 21788, <i>Demonstrate and apply knowledge of manufacturing processes and equipment for mechanical engineering</i> .

Explanatory notes

- 1 References
Health and Safety at Work Act 2015 and supporting Regulations.
- 2 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry sectors as examples of best practice.
Workplace procedures refer to procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, safety procedures, equipment operating procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.
- 3 Assessment information
Numerous reference texts and training manuals on mechanical engineering planning are available and may be used; however, no one textbook or source of information is envisaged. All activities must comply with applicable workplace procedures and must be consistent with accepted industry practice.

Outcomes and evidence requirements

Outcome 1

Describe principles of structured planning.

Evidence requirements

1.1 Principles of structured planning are described.

Range project identification, project scope, work breakdown structure, risk identification and evaluation.

Outcome 2

Describe key features of the planning process.

Evidence requirements

2.1 Network analysis is described in terms of its use in the planning process.

Range critical path method, logic, slack and float, Gantt charts, resource histograms, early/late start.

2.2 Resource allocation is described in terms of its use in the planning process.

Range principles – scheduling, loading, smoothing, limits;
resources – workforce, materials, equipment, finance.

2.3 Forecasting is described in terms of its use in the planning process.

Range statistical methods, errors.

2.4 Management strategies for change and risk analysis are described in terms of their use in the planning process.

Range finance, workforce, quality, markets, political climate, environment.

Outcome 3

Analyse mechanical engineering tasks and formulate solutions using planning principles and network analysis tools.

Range evidence of three tasks is required, at least one of which is completed using a proprietary software planning package.

Evidence requirements

3.1 Planning principles are used to develop best practice solutions for mechanical engineering tasks.

Range work breakdown structure, forecasting, management strategies for change, resource allocation, network analysis tools, optimum task completion.

3.2 Network analysis tools are used to develop best practice solutions for mechanical engineering tasks.

Range include but is not limited to – critical path method, Gantt charts.

Planned review date	31 December 2021
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 October 2005	31 December 2016
Rollover and Revision	2	19 March 2010	31 December 2021
Review	3	20 October 2016	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMRs). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.