

Title	Demonstrate and apply competence as an engineering technician		
Level	6	Credits	60

Purpose	People credited with this unit standard are able to: apply engineering knowledge, sound judgement, and jurisdiction requirements to well-defined engineering problems; manage well-defined engineering activities; communicate and interact effectively while carrying out well-defined engineering activities; and maintain currency of engineering knowledge and skills.
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Classification	Engineering > Generic Engineering
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Available grade	Achieved
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Guidance Information

- 1 The following legislation and requirements apply to this unit standard:
 Health and Safety at Work Act 2015;
 Resource Management Act 1991;
 Current New Zealand jurisdiction requirements and regulatory framework including but not limited to: compliance regimes covered by statute or local body by-law, design specifications, conditions of contract (including applicable registered standards and approved codes of practice), and public consultation procedures.
 Client and/or company specifications and standards;
 Engineering New Zealand 2018, *Your Guide to Assessments* available at <https://www.engineeringnz.org/resources/assessment-guidance/>;
 The ethical codes and standards relevant to professional bodies such as Engineering New Zealand, the Institute of Refrigeration, Heating and Air Conditioning Engineers of New Zealand Inc, or the Electricity Engineers' Association, New Zealand Asset Management Support.
- 2 Definitions
Accepted procedures and methodologies are the procedures and methodologies required by the candidate's engineering sector and which meet applicable legal and code requirements, registered standards, organisational policies and procedures, and manufacturers' specifications.
Good engineering management practice refers to good practice as it relates to managing processes, systems, and resources expected of an engineering technician to help achieve required outputs in accordance with the *Your Guide to Assessments*
Good practice may refer to the demonstration of professional characteristics and attitudes (including empathy, respect, cooperation, teamwork, ethical practice, active listening, and the ability to convey oral and written information in a manner that meets audience needs) as well as principles and practices expected of an engineering technician within an engineering sector. It may also include accepted procedures and methodologies.

Non-verbal communication refers to behaviour, other than spoken or written communication, that creates or represents meaning including, tone of voice, touch, smell, and body motion. It may include: symbols and sign language, body language, posture, and physical contact.

Sound judgement refers to the process by which a design, installation, operation, maintenance or safety problem is systematically evaluated, using a combination of knowledge, experience and intuition.

Verbal communication refers to communication that uses words, either written or spoken.

Well-defined engineering activities are activities or projects that include some or all of the following:

- Limited range of resources, e.g. people, money, equipment, materials, information and technologies
- Resolving interactions between limited technical and engineering issues where wider issues have little or no impact
- Using existing materials, techniques or processes in new ways
- Consequences that are important locally but aren't far-reaching
- Knowledge of practical procedures and practices for widely-applied operations and processes.

Well-defined engineering problems are problems that include some or all of the following:

- Several issues, but only a few that result in conflicting constraints
- Can be solved using a systematic approach
- Resolved with limited theory but extensive practical knowledge
- Frequently experienced and so familiar to most practitioners in the practice area
- Covered by standards and/or documented codes of practice
- Limited range of stakeholders with differing needs
- Consequences that are important locally but aren't far-reaching
- Discrete components of engineering systems.

3 Assessment

Assessment against this unit standard must be based on evidence from the practice area the candidate is engaged in. The practice area for the candidate may include but is not limited to: engineering consultancy, maintenance or asset management, design, manufacturing, installation, production engineering, technical sales and customer service, draughting services, construction, or contracting in any of the following engineering disciplines – civil, electrical, electronic or mechanical.

All outcomes and performance criteria in this standard must be demonstrated in accordance with accepted procedures and methodologies.

Outcomes and performance criteria

Outcome 1

Apply engineering knowledge, sound judgement, and jurisdiction requirements to well-defined engineering problems.

Range evidence of two problems is required.

Performance criteria

- 1.1 Engineering knowledge is applied to well-defined engineering problems.
- 1.2 Sound judgement in relation to well-defined engineering problems is exercised.
- 1.3 Problems are referred to peers and/or their supervisor or manager where appropriate.
- 1.4 Jurisdiction and regulatory framework requirements are applied to well-defined engineering problems.
- 1.5 Special engineering requirements related to own area of practice are applied to well-defined engineering problems.

Outcome 2

Manage well-defined engineering activities.

Range evidence of management of part or all of two activities is required.

Performance criteria

- 2.1 Well-defined activities are managed in accordance with good engineering management practice.

Range may include but is not limited to – planning, scheduling, and organising projects to deliver specific outcomes; applying quality assurance; managing personnel, financial, and physical resources; managing conflicting demands and expectations.

Outcome 3

Communicate and interact effectively while carrying out well-defined engineering activities.

Range evidence of two activities is required.

Performance criteria

- 3.1 Communication and interaction are demonstrated in accordance with good practice.

Range includes – verbal communication, non-verbal communication; may include but is not limited to – telephone, face-to-face, meetings, email or equivalent, formal reports.

- 3.2 Communication media suit the audience, purpose, and nature of the activity.

Range media include – visual, print, audio.

Outcome 4

Maintain currency of engineering knowledge and skills.

Performance criteria

4.1 The currency of engineering knowledge and skills is maintained.

Range may include but is not limited to – participation in education or training; mentoring; adapting and updating knowledge base; collaborative involvement with others in the engineering profession; professional development programmes.

Replacement information	This unit standard, unit standard 27473, unit standard 27474, and unit standard 27475 replaced unit standard 23410.
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Planned review date	31 December 2024
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 November 2011	31 December 2018
Review	2	16 June 2016	31 December 2021
Review	3	12 December 2019	N/A

Consent and Moderation Requirements (CMR) reference	0234
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Connexis - Infrastructure Industry Training Organisation qualifications@connexis.org.nz if you wish to suggest changes to the content of this unit standard.