Title	**Select, use, and care for complex engineering measuring equipment for precision jobs**		
Level	**4**	**Credits**	**4**

Purpose	People credited with this unit standard are able to select, use and care for complex engineering measuring equipment for precision jobs.

Classification	Mechanical Engineering > Engineering - Measurement

Available grade	Achieved

Guidance Information

1 Definitions
Accepted industry practice – approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry sectors as examples of best practice.
Complex engineering measuring equipment – equipment capable of measuring in two dimensions (2D) with a minimum of measurement uncertainty, and which requires specialist knowledge in terms of its purpose and operation. Examples are – gear tooth verniers, bevel protractors, thread measuring equipment, surface finish instruments, 2D optical comparators (profile projectors), computer-controlled height gauges, sine bars, and sine tables, co-ordinate measuring machines.
Workplace procedures – procedures used by the organisation carrying out the work and applicable to the tasks being carried out. Examples are – 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.

2 Recommended for entry
Unit 4437*, Select, use, and care for advanced engineering measuring equipment*.

Outcomes and performance criteria

Outcome 1

Select complex engineering measuring equipment.

Range three items of complex equipment.

Performance criteria

1.1 Measuring equipment is selected having regard to the quantity to be measured, expected magnitude, and ability to meet required tolerances.

1.2 Measurement technique is planned and explained prior to commencing work.

1.3 Measuring equipment is inspected for damage and faults, and, where necessary, remedial action is taken in accordance with workplace procedures and accepted industry practice.

Range examples of damage and faults are – deformation, breakages, missing parts, cleanliness, expired calibration, wear, corrosion.

Outcome 2

Use complex engineering measuring equipment.

Range items selected in outcome 1.

Performance criteria

2.1 Use of the measuring equipment achieves the required accuracy, and the tolerance of the measurement is quoted.

2.2 Measurements are validated by re-measurement with the same or alternate equipment.

2.3 Measuring equipment and objects to be measured are not damaged during measurement.

2.4 Measurements are recorded in accordance with accepted industry practice.

Range number of decimal places, units, prefixes, symbols, accuracy.

Outcome 3

Care for complex engineering measuring equipment.

Range items selected in outcome 1.

Performance criteria

3.1 Measuring equipment is handled and stored in a manner that maintains its integrity.

Planned review date	31 December 2022

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 May 1995	31 December 2011
Revision	2	14 April 1997	31 December 2011
Revision	3	5 January 1999	31 December 2011
Revision	4	23 May 2001	31 December 2011
Review	5	21 February 2005	31 December 2014
Review	6	17 June 2011	31 December 2022
Review	7	17 August 2017	N/A

Consent and Moderation Requirements (CMR) reference	0013

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

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.