Title	**Demonstrate workshop skills for mechanical engineering**		
Level	**2**	**Credits**	**12**

Purpose	People credited with this unit standard are able to: identify materials processing equipment and their uses; and select, use, and demonstrate workshop skills with materials processing equipment.

Classification	Mechanical Engineering > Applied Principles of Mechanical Engineering

Available grade	Achieved

Entry information	
Critical health and safety prerequisites	Unit 21911, *Demonstrate knowledge of safety on engineering worksites*; and Unit 21912, *Apply safe working practices on an engineering worksite*.

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 Range
Materials must include ferrous metal, non-ferrous metal, industrial plastic, and may also include composites.

4 Assessment information
- a Examples given must be within the context of mechanical engineering or manufacturing.
- b Numerous reference texts and training manuals on this topic 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

Identify materials processing equipment and their uses.

Evidence requirements

1.1 Hand tools are identified in terms of their principles of operation and application in processing materials.

Range hand tools may include but are not limited to – files, hacksaws, taps, dies, reamers, drills;
evidence of three hand tools is required.

1.2 Engineering measurement equipment is identified in terms of principles of operation and application in processing materials.

Range measurement equipment – callipers, dividers, rules, micronometers, Vernier height gauges, Vernier callipers.

1.3 Machinery types are identified in terms of their principles of operation and application in processing materials.

Range machinery types may include but are not limited to – mills, grinders, drilling machines, welders, lathes;
evidence of three machinery types is required.

Outcome 2

Select, use, and demonstrate workshop skills with materials processing equipment.

Evidence requirements

2.1 Hand tools are selected in accordance with task requirements.

Range hand tools may include but are not limited to – files, hacksaws, taps, dies, reamers, drills;
evidence of three hand tools is required.

2.2 Engineering measurement equipment is selected in accordance with task requirements.

Range measurement equipment includes but is not limited to – rules, micrometers, Vernier callipers.

2.3 Machinery is selected in accordance with task requirements.

Range machinery types may include but are not limited to – milling, grinding, drilling, welding, turning;
evidence of three machinery types is required.

2.4 Safety requirements are identified, explained, and managed in relation to the use of processing equipment and legislative requirements.

2.5 Processing equipment is used and workshop skills are demonstrated in completing the task requirements to given measurements and specifications.

2.6 Safety requirements are complied with relative to the processing equipment, process, material, and legislation.

Planned review date	31 December 2021

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 May 1998	31 December 2016
Review	2	27 October 2005	31 December 2016
Rollover	3	19 March 2010	31 December 2021
Review	4	20 October 2016	N/A

Consent and Moderation Requirements (CMR) reference	0013

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.