Title	Program a 2-axis CNC turning centre		
Level	4	Credits	10

Purpose	This unit standard, intended for on job assessment, is for people training to work in CNC machining roles.
	People credited with this unit standard are able to prepare to program, and program, a 2-axis CNC turning centre.

Classification	Mechanical Engineering > Engineering Machining and Toolmaking

Available grade	Achieved

Guidance Information

1   References
Health and Safety at Work Act 2015.

2   Definitions
CNC – Computer Numerical Control.
CNC turning centre – examples of CNC turning centres are: machines with live drive attachments on turrets, multi spindle, and robot loading and unloading capability.
Specifications – detail that defines an object being made; commonly communicated by annotated and dimensioned drawings; by written description, or by other communication media. External references may also be used to specify objects such as tables or industry standards.
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.

3   Recommended for entry
Unit 22910, *Produce a part program for a CNC engineering lathe or machining centre*.
Unit 30273, *Set up and operate a CNC engineering lathe or machining centre*.

4   Assessment Information
Technical problems encountered may be resolved in consultation with technical advisors.

5   Timeframe
All activities are expected to be completed within commercially acceptable timeframes.

Outcomes and performance criteria

Outcome 1

Prepare to program a 2-axis CNC turning centre.

Range   evidence of programming for machining of three different components is required.

Performance criteria

1.1   Machining sequence is determined from component specifications.

1.2   Tools are selected to meet component specifications.

1.3   Cutting parameters are defined for tool and material selection.

Outcome 2

Program a 2-axis CNC turning centre.

Range   components prepared in outcome 1.

Performance criteria

2.1   Program is produced to meet component specifications.

Range   examples of program production methods are – using CAM software, using machine controller.

2.2   Tool path is verified in accordance with workplace procedures.

Range   path verification could include dry run, computer simulation, CAD or CAM software simulation, machine controller graphics.

2.3   Modifications are made to ensure compliance with specifications.

Range   examples are modification of – speeds and feeds, tooling, offsets.

2.4   Job documentation is produced in accordance with workplace procedures.

2.5   Program produces component to specification.

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	26 September 2001	31 December 2012
Review	2	20 June 2006	31 December 2022
Rollover and Revision	3	17 November 2011	31 December 2022
Review	4	14 December 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.