

<b>Title</b>	<b>Set and operate a CNC machining centre</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>15</b>

<b>Purpose</b>	<p>This unit standard, intended for on job assessment, is for people training to work with CNC machining centres. It includes editing of cutting parameters and operational sequence through the program and manual adjustments at the controller.</p> <p>People credited with this unit standard are able to prepare to set, set, and operate a CNC machining centre; and adjust CNC machining centre settings.</p>
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<b>Classification</b>	Mechanical Engineering > Engineering Machining and Toolmaking
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 References  
Health and Safety at Work Act 2015.
- 2 Definitions  

**CNC** – Computer Numerical Control.  
*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.
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## Outcomes and performance criteria

### Outcome 1

Prepare to set a CNC machining centre.

Range three different components;  
machines with three or more axes.

### Performance criteria

- 1.1 Machine is checked before start-up in accordance with workplace procedures.  
Range examples are – guard door, visual checks, coolant level, fluid levels.
- 1.2 Specifications are interpreted to establish job requirements.
- 1.3 Tools and work-holding devices are selected and prepared for safe and efficient machining.  
Range examples are – roughing and finishing tooling, tool overhang, workpiece overhang, rigidity of work, clamping of workpiece.

### Outcome 2

Set a CNC machining centre.

Range components prepared in outcome 1.

### Performance criteria

- 2.1 Program is selected and loaded in accordance with component machining requirements.
- 2.2 Work-holding devices are installed on the machine in accordance with job requirements.
- 2.3 Tools are loaded into magazine in accordance with machine requirements and tool offsets are applied.
- 2.4 Component datum is set to machine.  
Range may include one or more datums.

**Outcome 3**

Operate a CNC machining centre.

Range jobs from outcome 2.

**Performance criteria**

3.1 Machine coolant type and flow are adjusted as required by machining operations.

3.2 Components are machined.

3.3 Components are measured to verify they meet specifications.

Range examples are size, required surface finish.

3.4 Machine is cleaned and waste material disposed of in accordance with workplace procedures.

**Outcome 4**

Adjust CNC machining centre settings.

**Performance criteria**

4.1 Cutting conditions are monitored and changes applied accordingly.

Range examples are editing of speed and feed; adjustment of manual override and tool offsets.

4.2 Worn or damaged tooling is adjusted, or replaced when required, in accordance with component machining requirements.

<b>Planned review date</b>	31 December 2022
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	17 January 1995	31 December 2012
Revision	2	14 April 1997	31 December 2012
Revision	3	13 November 1997	31 December 2012
Revision	4	5 January 1999	31 December 2012
Revision	5	25 September 2001	31 December 2012
Review	6	20 June 2006	31 December 2022
Rollover and Revision	7	17 November 2011	31 December 2022

Process	Version	Date	Last Date for Assessment
Review	8	14 December 2017	N/A

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

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### Comments on this unit standard

Please contact Competenz [qualifications@competenz.org.nz](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.