



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **LMFFM3031B Set up, operate and maintain CNC machining and processing centres**

**Revision Number: 1**

## LMFFM3031B Set up, operate and maintain CNC machining and processing centres

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers the competency to set up, operate and maintain CNC machining and processing centres to produce furniture or components
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### Application of the Unit

<b>Application of the unit</b>	
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### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

<b>Prerequisite units</b>	Nil	

### Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Work instructions are used to determine job requirements, including: design, quality, materials, equipment and quantities 1.2. Workplace health and safety requirements, including personal protection needs, are observed throughout the work 1.3. Material for machining is selected and inspected for appropriate quality 1.4. Procedures are determined for minimising waste material 1.5. Procedures are identified for maximising energy efficiency while completing the job
2. Set up for machining and processing	2.1. CNC program is set to job requirements 2.2. Safety equipment, including emergency stops, gauges, guards and controls are checked 2.3. Machining and processing settings and adjustments are made in accordance with job requirements and machining and processing and tool manufacturers' instructions 2.4. Machining and processing, cutting tools and jigs are checked for safe and effective operation 2.5. Trial runs are conducted to check machining and processing operation and quality of finished work 2.6. Final adjustments are made to CNC programs and equipment according to workplace procedures
3. Operate machining and processing centres	3.1. Machining and processing centres are operated and monitored to ensure product quality and output 3.2. Waste quantities are checked and minimised 3.3. Problems with the required work are identified and reported to appropriate persons 3.4. Items that do not meet quality requirements are repaired, recycled or discarded according to workplace procedures 3.5. Any authorised changes in working procedures are followed
4. Clean up work area and maintain equipment	4.1. Material that can be reused is collected and stored 4.2. Waste and scrap are removed following workplace procedures 4.3. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures 4.4. Operator maintenance is completed in accordance with manufacturers' specifications and site

ELEMENT	PERFORMANCE CRITERIA
	procedures 4.5. Unserviceable equipment is tagged and faults identified in accordance with workplace 4.6. Equipment and tooling is maintained in accordance with workplace procedures

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills

- collect, organise and understand information related to CNC machining and processing centre operations, work orders, plans and safety procedures
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise activities, including the preparation and layout of the worksite and the obtaining of equipment and materials to avoid any back tracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to correctly complete measurements, compute input data and estimate material requirements
- use pre-checking and inspection techniques to anticipate CNC machining and processing centre problems, avoid reworking and avoid wastage
- use the workplace technology related to CNC machining and processing centre, including machining and processing, tools, equipment and measuring devices

#### Required knowledge

- types, characteristics, uses and limitations of CNC machining and processing centres
- CNC theory, practices and techniques
- characteristics of materials used and uses of products produced
- workflow processes
- procedures for reporting materials, product or equipment faults

## Evidence Guide

### EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

#### Critical Aspects of Evidence

- Locate, interpret and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection practices to:
  - minimise the risk of injury to self or others
  - prevent damage to goods, equipment or products
  - maintain required production output and product quality
- Identify, set up and operate CNC machining and processing centre equipment to complete detailed profiling, including:
  - development and application of sub-program
  - development and application of parametric program, and
  - application of CAD/CAM functions
- Conduct operator maintenance on the machining and processing centre equipment
- Work effectively with others
- Modify activities to cater for variations in workplace contexts and environment

#### Resource Implications

CNC controlled equipment, standard operating procedures, unprocessed materials.

#### Method of Assessment

Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts.  
 Assessment should be by direct observation of tasks and questioning on underpinning knowledge.  
 Assessment should be conducted over time and may be in conjunction with assessment of other units of competency.

#### Context of Assessment

Assessment may occur on the job or in a workplace simulated facility with relevant process equipment,

<b>EVIDENCE GUIDE</b>
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	materials, work instructions and deadlines.
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## Range Statement

<b>RANGE STATEMENT</b>	
<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
<p><b>CNC machining and processing centres are to include three axis machining centre and may include:</b></p>	<ul style="list-style-type: none"> <li>• multi-tasking machining centres</li> <li>• flat-bed routers and mortiser</li> </ul>
<p><b>Material to be machined and processed is to include:</b></p>	<ul style="list-style-type: none"> <li>• solid timber and manufactured board</li> </ul>
<p><b>Unit scope</b></p>	<p>Work involves reading and interpreting drawings, selecting and installing tooling, setting jigs and fixtures, programming skills (sub-programs and parametrics), performance of CAM functions, downloading and storage of data to complete detailed profiling and other specified operations</p>
<p><b>Unit context</b></p>	<ul style="list-style-type: none"> <li>• OH&amp;S requirements include legislation, building codes, material safety management systems, hazardous substances and dangerous goods code and local safe operating procedures</li> <li>• Work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements</li> <li>• Work requires individuals to demonstrate some discretion, judgement and problem solving skills in the set up and operation of machining and processing centres</li> <li>• Competency may be demonstrated in workplaces involved in the manufacture of solid timber furniture, domestic furniture, commercial furniture, kitchen and bathroom cabinets and/or furniture components</li> </ul>
<p><b>Tools and equipment are to include:</b></p>	<ul style="list-style-type: none"> <li>• stand-alone or integral computing systems and machine-specific tools</li> </ul>



<b>RANGE STATEMENT</b>	
<b>Personal protective equipment</b>	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices
<b>Information and procedures</b>	<ul style="list-style-type: none"> <li>• Workplace procedures relating to the use of tools and equipment</li> <li>• Work instructions, including job sheets, cutting lists, plans, drawings and designs</li> <li>• Workplace procedures relating to reporting and communication</li> <li>• Manufacturers' specifications and operational procedures</li> </ul>

### Unit Sector(s)

<b>Unit sector</b>	Furniture Making
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### Competency field

<b>Competency field</b>	
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### Co-requisite units

<b>Co-requisite units</b>		