



**Australian Government**

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

# **LMFFT5010B Optimise CNC operations**

**Revision Number: 1**

## LMFFT5010B Optimise CNC operations

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers the analysis of production orders, production histories and machine capabilities and the manipulation of machine control programs to optimise production performance.
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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. Identify optimal operating conditions	1.1. The production potential of the components of the system are identified 1.2. Production orders and plans are analysed to identify sustained production requirements 1.3. Integration options are identified and analysed to ascertain the optimal integration model 1.4. Software and programming requirements to attain and sustain optimal integration are identified and recorded
2. Prepare for software installation	2.1. Program format and operational intent is accurately determined and required applications identified 2.2. Specifications are checked for required operating conditions 2.3. Program instructions are checked for compliance with specifications 2.4. Software timers are set to specification where required
3. Install and integrate automatic process machine control programs	3.1. Appropriate program loading technique is selected 3.2. External loading devices are correctly connected to automatic process machine control systems 3.3. Machine control system is placed in correct operational mode to accept program loading 3.4. Program is downloaded in accordance with manufacturers' recommended procedure and enterprise requirements 3.5. Checks are made during and after downloading to ensure accurate and complete data transfer 3.6. External program loading devices and connections are disconnected from process and machine control system 3.7. Integration protocols and actions are completed
4. Commission automatic process and machine control programs	4.1. Operation of the production system using the programs is observed 4.2. Outputs are checked and measured for compliance with specifications 4.3. External inputs are checked for compliance with specifications, according to specified procedures 4.4. Total operation is checked for compliance with specifications where applicable

ELEMENT	PERFORMANCE CRITERIA
	4.5. Location of program master copy storage is confirmed

## 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 production optimisation, including the relevant technical, regulatory, environmental and safety requirements
- communicate ideas and information to enable clarification of the requirements, coordination of work with site managers, supervisors, and other workers, and the reporting of work outcomes and problems
- plan and organise activities, including the obtaining of systems and materials to avoid any backtracking, workflow interruptions or unnecessary systems downtime
- 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 calculate flow and systems parameters
- create and apply systematic problem solving techniques to anticipate problems, avoid re-working and wastage
- use the full scope and potential workplace technology related to CNC production operations

#### Required knowledge

- company operating procedures, including procedures for programming CNC equipment
- operation requirements of equipment and work systems to be programmed

## 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 safety requirements throughout the sequence, including the use of personal protective clothing and equipment
- On a minimum of two occasions with at least one involving a CNC Machining and Processing Centre, optimise production, and
- Suggest improvements to CNC controlled operations and where authorised, negotiate changes
- Modify activities to cater for variations in workplace cultures and environment
- Work effectively with others

#### Resource implications

CNC production equipments, software, production materials and a production plan/schedule

#### Method of assessment

Assessment methods must confirm consistency or the potential for consistency of performance over time and in a range of workplace relevant contexts.

Assessment should be by direct observation and questioning on underpinning knowledge.

Assessment may 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, materials, work instructions and deadlines.

## 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>	
<b>Unit scope</b>	<ul style="list-style-type: none"> <li>• This unit covers the work involved in optimising CNC process and machine control programs used in the furnishing industry. It requires the integration of process machines that may normally function on a stand-alone basis.</li> <li>• The optimisation of CNC programs is undertaken in accordance with established enterprise procedures and practices may include requirements recommended by manufacturers/developers</li> </ul>
<b>Production systems</b>	Production systems are to include CNC machining and processing centres
<b>Unit context</b>	<ul style="list-style-type: none"> <li>• OHS requirements include legislation, building codes, material safety management systems, hazardous substances and dangerous goods codes and safe operating procedures</li> <li>• Work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, authorised handling procedures and organisation insurance requirements</li> <li>• Work requires individuals to demonstrate analytical and organisational ability, judgement and problem solving skills</li> </ul>
<b>Workplace environment</b>	<ul style="list-style-type: none"> <li>• Work is generally performed without other qualified assistance</li> <li>• Customers are normally internal</li> </ul>
<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>• Enterprise production plans and schedules</li> <li>• CNC and production systems manufacturers' specifications and instructions</li> <li>• Standard form of installing and commissioning</li> </ul>

**RANGE STATEMENT**

	<p>CNC programs</p> <ul style="list-style-type: none"> <li>• Organisation work specifications and requirements</li> <li>• Legislation/regulations/national and industry codes and practices relevant to the installation and commissioning</li> <li>• Quality and Australian standards and procedures</li> </ul>
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**Unit Sector(s)**

<b>Unit sector</b>	Furnishing Technology
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**Competency field**

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

<b>Co-requisite units</b>		