

## Modification history

Release	Comments
Release 2	This version released with FWP Forest and Wood Products Training Package Version [4.0]  Version created to update workplace health and safety requirements in performance criteria and clarify intent of unit and assessment requirements.
Release 1	This version replaces equivalent unit FPITMM5201B Assess product feasibility of designs, which was first released with FPI11 Forest and Forest Products Training Package Version 2.2.  This is the first release of this unit in the new standards format.

UNIT CODE	FWPTMM5205 Optimise CNC operations
<b>Application</b>	<p>This unit of competency describes the skills and knowledge required to <u>optimize overall performance of computer numerically controlled (CNC) sizing machines and CNC machining and processing centres, to maximize production output in a timber manufacturing facility. Work involve analysis analyseof</u> production orders, production history and machine capabilities and <u>ability</u> to manipulate machine control programs to optimise production performance for <del>computer numerically controlled (CNC) sizing machines, and CNC machining and processing centres. Work is completed in a forest products factory environment.</del></p> <p>The unit applies to individuals who work as managers or supervisors of timber manufacturing facilities <del>who are responsible for optimizing overall machinery performance to maximize production output. They generally demonstrate autonomy, judgement and limited responsibility in known or changing contexts and within established parameters.</del></p> <p>No licensing, legislative, regulatory, or certification requirements apply to this unit at the time of publication.</p>
<b>Prerequisite Unit</b>	Nil
<b>Unit Sector</b>	Timber Manufactured Products Timber Merchandising

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish optimal operating conditions	<p><u>1.1 Follow workplace health and safety requirements and emergency procedures and use personal protective equipment (PPE) in line with operational requirements throughout operations</u></p> <p><u>1.2 Identify and report hazards, accidents, incidents and/or near misses in line with operational requirements and health and safety legislative requirements to maintain safe work practices</u></p> <p>1.4-3 Assess production potential of system components</p> <p>1.2-4 Analyse production orders and plans to identify sustained production requirements</p> <p>1.3-5 Identify and analyse integration options to establish optimal integration model</p> <p>1.4-6 Assess and record software and programming requirements to attain and sustain optimal integration</p>
2. Prepare for software installation	<p>2.1 Diagnose program format and operational purpose and identify specified applications</p> <p>2.2 Check specifications for intended operating conditions</p> <p>2.3 Check program instructions for compliance with specifications</p> <p>2.4 Counter set software timers to specification</p>

<b>Elements</b>	<b>Performance Criteria</b>
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
3. Install and integrate automatic process machine control programs	3.1 Select appropriate program loading technique 3.2 Connect external loading devices correctly to automatic process machine control system 3.3 Place machine control system in correct operational mode to accept program loading 3.4 Download program in line with manufacturer's recommended procedure 3.5 Check during and after downloading to ensure accurate and complete data transfer 3.6 Disconnect external program loading devices and connections from process and machine control system 3.7 Complete integration protocols and actions
4. Commission automatic process and machine control program	4.1 Monitor operation of equipment using the program for accuracy and safe performance 4.2 Measure and check outputs for compliance with specifications and ensure maximum output 4.3 Check external inputs for compliance with specifications 4.4 Check total operation for compliance with specifications and resolve any issues 4.5 Identify location for storage of program master copy and store accordingly 4.6 Record installation and commissioning process and problems and report to appropriate personnel

<b>Foundation Skills</b>	
<i>This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.</i>	
<b>Skill</b>	<b>Description</b>
Numeracy	<ul style="list-style-type: none"> <li>interpret sizing specifications for machines and monitor the operation of commissioned machines to ensure accurate calibration</li> </ul>
Reading	<ul style="list-style-type: none"> <li>interpret detailed information in production orders and plans</li> <li>interpret detailed and sometimes unfamiliar instructions for installing CNC software and commissioning machinery</li> </ul>
Writing	<ul style="list-style-type: none"> <li>complete detailed and accurate reports on installation and commissioning processes and problems</li> </ul>
Plan and organise	<ul style="list-style-type: none"> <li>efficiently and logically manage operational logistics for installing software and commissioning machinery</li> </ul>
Problem-solving	<ul style="list-style-type: none"> <li>monitor machinery for compliance with calibration specifications and resolve any issues</li> </ul>
Technology	<ul style="list-style-type: none"> <li>use computerised operating controls for CNC machines to monitor accurate and safe performance</li> </ul>

<b>Unit Mapping Information</b>			
<b>Code and title current version</b>	<b>Code and title previous version</b>	<b>Comments</b>	<b>Equivalence status</b>
FWPTMM5205 Optimise CNC operations	FWPTMM5205 Optimise CNC operations	Updated workplace health and safety requirements in performance criteria and clarified intent of unit and assessment requirements	Equivalent unit

<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47">https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47</a>
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<b>TITLE</b>	<b>Assessment requirements for FWPTMM5205 Optimise CNC operations</b>
<b>Performance Evidence</b>	
<p>An individual demonstrating competency must satisfy all of the elements, performance criteria and foundation skills of this unit. There must be evidence that, on at least one occasion, the individual has:</p> <ul style="list-style-type: none"> <li>installed and commissioned <del>computer numerically controlled (CNC)</del> integrated software to attain and sustain optimal integration in CNC sizing machines and/or CNC machining and processing centres to produce different outputs</li> <li>checked that machine is operating safely, in line with its intended purpose and program and to maximum output</li> <li>completed a detailed and accurate report, for each installation, on the installation and commissioning process and problems encountered.</li> </ul>	

<b>Knowledge Evidence</b>	
<p>An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:</p> <ul style="list-style-type: none"> <li><u>health and operational hazards or risks related to optimising CNC operations as identified through risk assessments, manufacturer technical information, regulations and industry health and safety guides</u></li> <li>organisational procedures for <u>optimising CNC operations</u>:             <ul style="list-style-type: none"> <li><u>workplace health and safety requirements</u> <ul style="list-style-type: none"> <li>installing software and commissioning machinery</li> <li>recording and reporting on installation and commissioning processes and problems</li> </ul> </li> </ul> </li> <li>for the CNC software:             <ul style="list-style-type: none"> <li>program format and operational purpose</li> <li>compatibility of two or more sets of software</li> <li>system functions and capabilities</li> <li>methods to install and collate two or more sets of software information established through a common identifier</li> <li>methods to maximise the program to maximise machine output</li> <li>methods to commission machinery to operational specification</li> <li>requirements for safe storage of program master copy</li> </ul> </li> <li>for the machinery being commissioned:             <ul style="list-style-type: none"> <li>operational purpose and sizing specifications</li> <li>maximum production capacity</li> <li>methods to monitor the operation of commissioned machines and check calibration.</li> </ul> </li> </ul>	

<b>Assessment Conditions</b>	
<p>Assessment of skills must take place under the following conditions:</p> <ul style="list-style-type: none"> <li>physical conditions:             <ul style="list-style-type: none"> <li>skills must be demonstrated in an environment that accurately represents workplace conditions</li> </ul> </li> <li>resources, equipment and materials:             <ul style="list-style-type: none"> <li>CNC sizing machines and CNC machining and processing centres</li> <li>CNC software programs</li> </ul> </li> <li>specifications:             <ul style="list-style-type: none"> <li>production plans and information on production orders</li> <li>machine sizing specifications</li> <li>instructions for installing CNC software and commissioning machinery</li> <li>template reports for installation and commissioning processes and problems</li> <li><u>workplace health and safety and emergency procedures</u></li> <li><u>personal protective equipment suitable for optimising CNC machines and operations</u></li> <li>organisational procedures for installing software and commissioning machinery</li> </ul> </li> <li>relationships:             <ul style="list-style-type: none"> <li>relevant personnel for the purposes of communicating information.</li> </ul> </li> </ul> <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>	

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