Australian Government

Department of Education, Employment and Workplace Relations

FPITMM4203B Install and commission CNC software

Release: 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

FPITMM4203B Install and commission CNC software

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit specifies the outcomes required to install and commission computer numerically controlled (CNC) processes and machine control programs for CNC sizing machines and CNC machining and processing centres
	General workplace legislative and regulatory requirements apply to this unit; however there are no specific licensing or certification requirements at the time of publication
	This unit replaces FPITMM4203A Install and commission CNC software

Application of the Unit

Application of the unit	This unit involves installing and commissioning CNC software in a forest products factory setting
	The skills and knowledge required for competent workplace performance are to be used within the scope of the person's job and authority

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units

Employability Skills Information

Employability skills   This unit contains employability skills

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 software installation	1.1. Applicable *Occupational Health and Safety* (OHS), *environmental*, *legislative* and *organisational requirements* relevant to *installing and commissioning CNC software* are identified and followed
	1.2. *Program format* and operational purpose are accurately diagnosed and specified applications identified
	1.3. Specifications are checked for intended operating conditions
	1.4. Program instructions are checked for compliance with specifications
	1.5. *Software timers* are counter set to specification
	1.6. *Communication* with others is established and maintained in line with OHS requirements
2. Install automatic process machine control programs	2.1. Appropriate program loading technique is selected
	2.2. *External loading devices* are correctly connected to automatic process *machine control system*
	2.3. Machine control system is placed in correct operational mode to accept program loading
	2.4. Program is downloaded in line with manufacturer's' recommended procedure and enterprise requirements
	2.5. Checks are made during and after downloading to ensure accurate and complete data transfer
	2.6. External program loading devices and connections are disconnected from process and machine control system
3. Commission automatic process and machine control program	3.1. Operation of the equipment using the program is monitored for accuracy and safe performance
	3.2. *Outputs* are checked and measured for compliance with specifications
	3.3. *External inputs* are checked for compliance with specifications, in line with specified procedures
	3.4. Total operation is checked for compliance with specifications
	3.5. Location of *program master copy* storage is identified
	3.6. Installation and commissioning process and equipment faults are *recorded and reported* to appropriate personnel

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level required for this unit

Required skills

- Technical skills sufficient to use and maintain relevant tools, machinery and equipment, safely install and commission CNC software
- Communication skills and interpersonal techniques sufficient to interact appropriately with colleagues and others in the workplace
- Literacy skills sufficient to accurately record and report workplace information, and maintain documentation
- Numeracy skills sufficient to estimate, measure and calculate time required to complete a task
- Problem solving skills sufficient to identify problems and equipment faults and demonstrate appropriate response procedures

Required knowledge

- Applicable Commonwealth, State or Territory legislation, regulations, standards and codes of practice relevant to the full range of processes for installing and commissioning CNC software
- Environmental protection requirements, including the safe disposal of waste material and minimising carbon emissions
- Organisational and site standards, requirements, policies and procedures relevant to installing and commissioning CNC software
- Environmental risks and hazards
- Using energy efficiently
- Software programs and installation methods
- Commissioning procedures
- Established communication channels and protocols
- Problem identification and resolution strategies and common fault finding techniques
- Types of tools and equipment and procedures for their safe use, operation and maintenance
- Appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks
- Procedures for recording and reporting workplace information

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.

Overview of assessment	A person who demonstrates competency in this unit must be able to provide evidence that they can safely and efficiently install and commission CNC software in line with organisational requirements
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements of this unit and include demonstration of:
	• following applicable Commonwealth, State or Territory legislative and regulatory requirements and codes of practice relevant to installing and commissioning CNC software
	• following organisational policies and procedures relevant to installing and commissioning CNC software
	• effective communication and safe working practices
	• installing and commissioning CNC software for CNC equipment within the enterprise
Context of and specific resources for assessment	• Competency is to be assessed in the workplace or realistically simulated workplace
	• Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
	• Assessment of required knowledge, other than confirmatory questions, will usually be conducted in an off-site context
	• Assessment is to follow relevant regulatory or Australian Standards requirements
	• The following resources should be made available:
	• workplace location or simulated workplace
	• materials and equipment relevant to undertaking work applicable to this unit
	• specifications and work instructions
Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
	• Assessment methods must confirm consistency and accuracy of performance (over time and in a range of

EVIDENCE GUIDE

workplace relevant contexts) together with application of required knowledge
- Assessment must be by direct observation of tasks, with questioning on required knowledge and it must also reinforce the integration of employability skills
- Assessment methods must confirm the ability to access and correctly interpret and apply the required knowledge
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency
- The assessment environment should not disadvantage the candidate
- Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English
- Where the participant has a disability, reasonable adjustment may be applied during assessment
- Language and literacy demands of the assessment task should not be higher than those of the work role

Range Statement

RANGE STATEMENT

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.

OHS requirements: are to be in line with applicable Commonwealth, State or Territory legislation and regulations, and organisational safety policies and procedures, and

RANGE STATEMENT

	may include:
	• personal protective equipment and clothing
	• safety equipment
	• first aid equipment
	• fire fighting equipment
	• hazard and risk control
	• fatigue management
	• elimination of hazardous materials and substances
	• safe forest practices including required actions relating to forest fire
	• manual handling including shifting, lifting and carrying
Environmental requirements may include:	• legislation
	• organisational policies and procedures
	• workplace practices
Legislative requirements:	are to be in line with applicable Commonwealth, State or Territory legislation, regulations, certification requirements and codes of practice and may include:
	• award and enterprise agreements
	• industrial relations
	• Australian Standards
	• confidentiality and privacy
	• OHS
	• the environment
	• equal opportunity
	• anti-discrimination
	• relevant industry codes of practice
	• duty of care
Organisational requirements may include:	• legal
	• organisational and site guidelines
	• policies and procedures relating to own role and responsibility
	• quality assurance
	• procedural manuals
	• quality and continuous improvement processes and standards
	• OHS, emergency and evacuation procedures
	• ethical standards

RANGE STATEMENT

	- recording and reporting requirements - equipment use and maintenance and storage requirements - environmental management requirements (waste minimisation and disposal, recycling and re-use guidelines)
Installing and commissioning CNC software is to include:	- the process of setting a program to direct a piece of CNC equipment to undertake the sequence of work and output required. commissioning includes: - checking that the machine is operating safely and in line with its intended purpose and program
Program format	relates to the intended actions of the CNC machine and the time needed to perform those actions, taking into account the limitations of the machinery and cutters
Software timer	is the software component that schedules which activities occur at what point in the program format
Communication may include:	- schedules - verbal and non-verbal language - constructive feedback - active listening - questioning to clarify and confirm understanding - use of positive, confident and cooperative language - use of language and concepts appropriate to individual social and cultural differences - control of tone of voice and body language
External loading devices	are computers (desktop, notebook or laptop) with disk drives able to be linked to the machine control system
Machine control system	is the computerised operating controls for the CNC machine which stores and runs the program at the direction of an operator
Output	is the product intended for production, produced to the intended outcome following the program

RANGE STATEMENT

	format in the intended time
External inputs	involve feeding the program from the attached computer to the machine control system which is checked for accuracy with the program master
Program master copy:	• is the final approved operating program which will be used to reset the CNC machine after maintenance or recalibration of components • is stored in a safe location away from the CNC machine
Records and reports may include:	• planning and monitoring outcomes • operating logs • performance records • material movement • quality outcomes • hazards • incidents or equipment malfunctions

and may be:

• manual
• using a computer-based system or other appropriate organisational communication system

Unit Sector(s)

Unit sector   No sector assigned

Co-requisite units

Co-requisite units

Competency field

Competency field   Timber Manufactured Products and Timber Merchandising