Australian Government

Department of Education, Employment and Workplace Relations

CPCCJN3002A Use computer-controlled machinery

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit specifies the outcomes required to program, load and operate computer-controlled machinery for the production of components.

Manufacturing applications are shopfitting, joinery and stair building work.

Application of the Unit

Application of the unit

This unit of competency supports the achievement of skills and knowledge to use computer-controlled machining processes providing for multiple production process or designed finishes, which may include working with others and as a member of a team.

It does not apply to stonemasonry work or stonemasonry production work.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units

CPCCOHS2001A	Apply OHS requirements, policies and procedures in the construction industry

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. Plan and prepare.	1.1. Work instructions and operational details are obtained using relevant ***information***, confirmed and applied for ***planning and preparation*** purposes. 1.2. ***Safety*** (***OHS***) requirements are followed in accordance with safety plans and policies. 1.3. Signage and barricade requirements are identified and implemented. 1.4. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability and any faults are rectified or reported prior to commencement. 1.5. Material quantity requirements are calculated in accordance with plans, specifications and ***quality requirements***. 1.6. ***Materials*** appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use. 1.7. ***Environmental requirements*** are identified for the project in accordance with environmental plans and ***statutory and regulatory authority*** requirements, and are applied.
2. Carry out data input adjustments.	2.1. Programming terms, methods and data storage capacity are determined and stated consistent with job requirements and machine specifications. 2.2. Program is edited to produce straight and circular tool movements, compensating for tool profiles. 2.3. Program is entered.
3. Transfer program to machine control.	3.1. Methods of transferring programs into machine memory are identified and listed. 3.2. Program is loaded into machine memory using appropriate method.
4. Demonstrate operation of the loaded program to control the machine.	4.1. ***Program operations*** are tested through dry run simulation mode, and alarm settings and program are edited where required using the control station. 4.2. Specified work piece is produced using automatic mode as per manufacturer specifications.
5. Clean up.	5.1. Debris and waste materials are removed on completion of process. 5.2. Re-usable and recyclable materials are salvaged and stored.

ELEMENT	PERFORMANCE CRITERIA
	5.3. Tools and equipment are cleaned, maintained and stored.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills for this unit are:

- ability to recognise procedures, respond to change and contribute to workplace responsibilities, such as current work site environmental or sustainability frameworks or management systems
- communication skills to:
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - follow instructions
  - read and interpret drawings, specifications and job designs
  - use and interpret non-verbal communication
  - use language and concepts appropriate to cultural differences
- basic keyboarding skills
- basic problem and fault-finding skills with software applications
- innovation skills to select appropriate tools and equipment, respond to workplace challenges and put ideas into action
- numeracy skills to apply workplace requirements
- planning and organisational skills to identify requirements, apply relevant resources and sequence tasks
- problem solving skills to recognise and take action to rectify minor faults and problems
- teamwork skills to be able to work with others to action tasks and relate to people from a range of cultural, social, ethnic backgrounds and with varying physical and mental abilities.

Required knowledge

Required knowledge for this unit is:

- construction materials and their characteristics
- hardware requirements for relevant software
- job safety analysis (JSA) and safe work method statements

REQUIRED SKILLS AND KNOWLEDGE

- measuring techniques relevant to dimensions and shape
- range of software applications appropriate to computer numerically-controlled (CNC) equipment
- types and uses of computer-controlled machinery
- types of static machines and machining processes
- workplace and equipment safety requirements.

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

This unit of competency could be assessed in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques fully replicate construction workplace conditions, materials, activities, responsibilities and procedures.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of the ability to produce two separate components using any of the materials listed in the range statement, providing evidence of the ability to:

- comply with OHS regulations applicable to workplace operations
- select and use appropriate processes, tools and equipment consistent with requirements of activity
- apply organisational quality procedures and processes within the context of operating computer-controlled machinery
- select and correctly apply program opening and shut-down procedures
- demonstrate correct procedures to provide data input to achieve requirements of job
- demonstrate sound procedures with machine operated through a reduced speed dry run to check functions and alarms
- produce products to design in accordance with job specifications and drawings
- communicate with others to ensure safe and effective workplace operations
- identify typical faults and problems that may occur and action required to rectify them.

Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge

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	will usually be conducted in an off-site context. Assessment is to comply with relevant regulatory or Australian standards' requirements. Resource implications for assessment include: • CNC machinery applicable to proposed activity • range of cutters, heads and required tools and equipment • machining projects and specifications relevant to activity • data and software programs relevant to application activity • material applicable to activity. Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.
Method of assessment	Assessment methods must: • satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package • include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application • reinforce the integration of employability skills with workplace tasks and job roles • confirm a reasonable inference that competency is not only verified under the particular assessment circumstance, but is able to be transferred to other circumstances and environments. Validity and sufficiency of evidence requires that: • competency will need to be demonstrated over a period of time reflecting the scope of the role and practical requirements of the workplace • where the assessment is part of a structured learning experience the evidence collected

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must relate to a number of performances assessed at different points in time and separated by further learning and practice with a decision on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge

- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

Assessment processes and techniques should, as far as is practical, take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

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.

Information includes:

- diagrams or sketches
- instructions issued by authorised organisational or external personnel
- manufacturer specifications and instructions, where specified
- material safety data sheets (MSDS)
- memos
- regulatory and legislative requirements pertaining to use computer-controlled machinery

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	• relevant Australian standards • safe work procedures relating to use computer-controlled machinery • signage • verbal, written and graphical instructions • work bulletins • work schedules, plans and specifications.
Planning and preparation include:	• assessment of conditions and hazards • determination of work requirements and safety plans and policies • equipment defect identification • work site inspection.

Safety (***OHS***) is to be in accordance with state and territory legislation and regulations and project safety plan and may include:	• emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation
	• hazard control
	• hazardous materials and substances
	• organisational first aid
	• PPE prescribed under legislation, regulations and workplace policies and practices
	• safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
	  • concealed services (water, power and gas)
	  • lighting
	  • restricted access barriers
	  • traffic control
	  • work site visitors and the public
	  • working at heights
	  • working in confined spaces
	  • working in proximity to others
	• use of firefighting equipment
	• use of tools and equipment
	• workplace environmental requirements and safety.

Quality requirements include:	• control of handling procedures • procedures for computer controlled production • quality of materials • relevant regulations, including: • Australian standards

RANGE STATEMENT

	• internal company quality policy and standards • manufacturer specifications where specified • workplace operations and procedures • use and maintenance of equipment • workplace operations and procedures.
Materials include:	• acrylics • medium density fibreboard (MDF) • timber.
Environmental requirements include:	• clean-up management • dust and noise • stormwater protection • waste management.
Statutory and regulatory authority includes:	• federal, state and local authorities administering applicable Acts, regulations and codes of practice.
Program operations include:	• boring • cutting • cutting and polishing • forming/shaping • milling.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

Functional area

Functional area