



Australian Government

Department of Education, Employment and Workplace Relations

MEM23003A Operate and program computers and/or controllers in engineering situations

Release: 1

MEM23003A Operate and program computers and/or controllers in engineering situations

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers operating computers and/or controllers in industrial situations and preparing and maintaining programs.
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Application of the Unit

Application of the unit	This unit applies to operating and programming computers &/or controllers in industrial situations. It includes operating computer/controller hardware and software for engineering tasks; developing or customising computer/controller systems or programs. This unit only has application in qualifications that are not points based. Band: 0 Unit Weight: 0
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM16008A	Interact with computing technology

Employability Skills Information

Employability skills	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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Operate a computer and/or controller system	1.1. Operate a range of hardware to complete engineering tasks. 1.2. Use appropriate software to produce required outcomes. 1.3. Identify and use available sources of help to overcome basic difficulties with applications. Ensure technical instructions are followed and inconsistencies and technical difficulties investigated and resolved. This should include adherence to occupational health and safety regulations / guidelines.
2. Develop/customise computer and/or controller systems/programs	2.1. Work plan for the programming/customising task is prepared in accordance with organizational guidelines. 2.2. Programs are written/altered/customised in the required format and computer language. Develop and maintain client engagement with project or task. 2.3. Program/system records are maintained and made available to all interested parties following company procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Look for evidence that confirms skills in:

- completing tasks using selected hardware in accordance with manufacturer's instructions and to workplace procedures
- using CPU, I/O, peripherals, interfaces, actuators and other computer/controller equipment
- accessing and using appropriate software in accordance with manufacturer's instructions to complete task requirements
- saving and storing documents and other computer/controller files in an appropriate directory in accordance with manufacturer's instructions and workplace procedures

REQUIRED SKILLS AND KNOWLEDGE

- identifying and analysing difficulties using appropriate help sources
- preparing work plans for programming/customising task
- writing/altering/customising programs
- testing and amending programs
- maintaining records

Required knowledge

Look for evidence that confirms knowledge of:

- functions and operating procedures of CPU, I/O, peripherals, interfaces, actuators and other computer/controller equipment
- applications of available hardware and criteria for selecting the hardware for particular tasks
- procedures for operating hardware
- procedures for checking and replacing hardware consumables
- available software and their applications
- procedures and commands for the use of identified software
- procedures and related requirements for saving and storing documents and computer/controller files
- techniques for accessing, transferring, printing documents or other computer files or using computer files to control plant and equipment
- techniques for accessing and using manuals and training booklets to solve minor problems
- procedures for accessing sources of help
- techniques for accessing help with typical difficulties with selected applications
- typical programming/customising sequencing and related issues
- techniques and procedures for preparing a work plan for a programming/customising task
- techniques and procedures for writing/customising programs in specified formats and computer language
- techniques and procedures for testing and amending programs
- procedures for checking program alteration with users
- procedures for maintaining records and reports on program/system development or enhancement
- procedures for disseminating information on program/system development

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 operate and program computers and/or controllers in engineering situations. Competency in this unit cannot be claimed until all prerequisites have been satisfied.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with operating and programming computers and/or controllers in engineering situations or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with applying calculus in engineering situations or other units requiring the exercise of the skills and knowledge covered by this unit.
Guidance information for assessment	

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.	
Hardware	Personal computers, networked systems, personal organisers, communications equipment, PLC and microprocessor controllers, computer controlled machinery and systems, etc.
Tasks	To be carried out under appropriate supervision using predetermined standards of safety, computer application and technical analysis
Software	Commercial software applications, CAD and CAM software, organisation specific software, PLC or microprocessor controller software, word processing, spreadsheet, database, graphic, communication packages and presentation packages, etc
Technical instructions	Manufacturer's and organisational instructions for use of specific computer hardware
Inconsistencies and technical difficulties	Resolved in consultation with appropriate technical advisers
Occupational health and safety regulations / guidelines	Screen based equipment, computing equipment and peripherals and ergonomic work stations, etc.
Programming	Visual Basic, Ladder Logic, Flow Chart, program customising, spreadsheet programming, writing macros, setting up/varying databases and the like.
Organisational guidelines	Security procedures, OH&S procedures, maintenance procedures, etc.
Develop and maintain client engagement	Ongoing communication with clients required to ensure that engineering services are effectively delivered

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Engineering science
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