



Australian Government

ICPPTD304 Apply problem solving techniques to 3D printing maintenance and operation

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICP Printing and Graphic Arts Training Package Version 3.0.

Application

This unit describes the skills and knowledge required to apply problem solving techniques, undertake operational maintenance and implement solutions required of three-dimensional (3D) printing.

It applies to individuals, employed in a range of industry sectors, who provide 3D printing services and who are required to perform routine maintenance and troubleshooting in addition to their main duties.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Three-Dimensional Printing

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Apply operational maintenance techniques	1.1 Interpret and undertake operational maintenance according to manufacturer specifications 1.2 Identify and address potential risks, hazards and environmental issues and implement control measures 1.3 Select and wear personal protective equipment (PPE) for work activities in accordance with work health and safety (WHS) procedures 1.4 Identify and obtain equipment required for maintenance according to organisational policies and procedures

	1.5 Carry out routine maintenance activities according to manufacturer specifications 1.6 Create and maintain a record of maintenance undertaken 1.7 Identify and document recommended spare parts required according to manufacturer specifications
2. Identify and document faults and current conditions	2.1 Identify and record hardware, software, user or procedural faults as they occur 2.2 Assess findings and define faults to be investigated 2.3 Develop a register for the purposes of documenting current conditions of hardware, software or operating procedures
3. Research and consider solutions to faults	3.1 Conduct research to identify and document potential solutions to faults according to organisational policies and procedures and manufacturer specifications 3.2 Develop and evaluate potential solutions to determine approach to rectification in accordance with organisation's policies and procedures 3.3 Present recommended solution to designated persons for confirmation or escalation as required
4. Implement solution	4.1 Plan and prepare for implementation of solution 4.2 Gather equipment and resources required for the implementation of selected solution 4.3 Apply agreed techniques to respond to identified issue 4.4 Test hardware, software and procedures to determine whether solution was successful in resolving identified fault 4.5 Evaluate implemented solution for efficiency and record findings

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	Interprets familiar textual information from a range of sources to identify faults, compare technical specifications, and identify solutions to new and emerging issues

Writing	Develops materials and resources using simple vocabulary to record information in a sequential manner for client engagement as well as internal reference
Oral Communication	- Presents complex information using clear and persuasive language, and appropriate tone and pace for the audience and purpose - Participates in verbal exchanges using active listening and questioning to convey and clarify printing information
Navigate the world of work	- Understands roles and responsibilities for tasks and makes decisions on work required - Complies with organisational and manufacturer procedures and specifications
Interact with others	Understands what to communicate, with whom and how, in work situations
Get the work done	- Accepts responsibility for planning and implementing routine and complex tasks - Uses problem solving techniques to evaluate faults as they occur - Initiates standard diagnostic and maintenance procedures when responding to familiar and unfamiliar problems

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICPPTD304 Apply problem solving techniques to 3D printing	Not applicable	New Unit	Not applicable

Links

Companion Volume Implementation Guides are available from VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a74b7a0f-a253-47e3-8be0-5d426e24131d>

Assessment Requirements for ICPPTD304 Apply problem solving techniques to 3D printing maintenance and operation

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Performance Evidence

The candidate must demonstrate they can perform the following according to the standards defined in the elements, performance criteria and foundation skills of this unit.

The candidate must demonstrate the ability to undertake routine maintenance and trouble shoot and rectify problems for a 3D printer in accordance with work health and safety requirements and workplace procedures to meet required outcomes. This includes demonstrating the ability to:

- undertake routine maintenance on a 3D printer according to manufacturer specifications a minimum of 2 times
- determine the cause of a routine malfunction a minimum of 2 times
- produce documentation that records faults and recommends solutions to problems
- prepare, operate and shut down a 3D printer according to manufacturer and organisational requirements.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

The candidate must be able to demonstrate the following knowledge to effectively complete the tasks outlined in the elements and performance criteria of this unit, and to manage tasks in the context of the work role:

- current hardware, software and procedures
- current industry maintenance and service practices, processes and procedures
- current operating systems
- solutions to common faults in hardware and software
- features of common 3D printers including:
 - basic operation
 - common applications

- hazards associated with use
- construction technology
- work health and safety (WHS) considerations for consumables used in current 3D printers
- workplace procedures and WHS requirements for working with technologies currently used for 3D printing.
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Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the printing and graphic arts field of work and include access to:

- a 3D printer
- manufacturer's operating procedures
- relevant personal protective equipment (PPE)
- organisational and manufacturer operating procedures.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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