



Australian Government

ICPKNW322 Develop knowledge of the printing and graphic arts industry

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 2.0.

Application

This unit describes the skills and knowledge required to work in or deal with individuals in various sectors of the printing and graphic arts industry.

It applies to individuals who require detailed technical knowledge in particular areas of the industry, together with a working knowledge of related areas. Individuals need the skills to facilitate technical communication and to work as a member of a team.

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

Unit Sector

Holistic knowledge

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 knowledge of the printing industry	1.1 Printing industry terminology and vocabulary are used correctly and accurately 1.2 New technology and new work processes are monitored and implemented when required 1.3 Trends within the printing industry are monitored, on an ongoing basis, to inform personal work practices 1.4 Basic principles and obligations of legislative, standards and industrial awards are researched and followed within the workplace and in personal work practices
2. Acquire knowledge of	2.1 Principles behind pre-press functions such as image

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the graphic pre-press, graphic design and multi-channel communications sector	production, image combining, image output and workflow are researched 2.2 Different types of images are assessed to identify the most appropriate usage 2.3 Different types of output are researched and their effects on final product are evaluated 2.4 Different output devices are researched to identify appropriate usage 2.5 Differences between various markup and scripting languages and their application are assessed to identify most appropriate usage 2.6 Platforms and computer systems requirements for different products are researched and their effects on final product are evaluated
3. Acquire knowledge of printing machining sector	3.1 Basic principles of printing processes (lithography, relief, flexography, gravure, pad printing, screen printing, digital and electronic printing) are researched 3.2 Types of products and processes are researched to identify appropriate usage 3.3 Capabilities and limitations of each process are reviewed
4. Acquire knowledge and requirements of the converting, binding and finishing sector	4.1 Basic characteristics of converting and finishing processes (guillotining, flat-bed and rotary cutting, collating, folding, adhesive, mechanical and thermal fastening) are researched 4.2 Types of processes are researched to identify appropriate usage 4.3 Capabilities and limitations of each process are reviewed
5. Acquire knowledge and requirements of the ink manufacturing sector	5.1 The ink manufacturing sector, its products, services and supplier profile are identified 5.2 Enterprise products and services, their characteristics and their end use, specifically with regard to printing industry, are identified 5.3 Printing processes and their implication for ink manufacture are researched 5.4 Manufacturing processes and quality control procedures for ink, coating, varnish, resin, or chemical production are identified
6. Acquire knowledge and requirements of mail	6.1 Australia Post Standards and weight and size limitations are researched

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house operations	6.2 Equipment used in mail house operations is researched 6.3 Computer driven bar code, sorting, tagging and reading systems are researched to identify appropriate usage 6.4 Data management and processing systems and software are researched to identify appropriate usage 6.5 Computerised document management, design and reading systems and software are researched to identify appropriate usage 6.6 Computerised market research, listing services and associated software are researched to identify appropriate usage
7. Acquire knowledge of colour theory	7.1 Colour theory of additive colours (light), Red, Green, Blue (RGB), is researched to inform pre-press and/or design decisions 7.2 Colour theory of subtractive colours (pigments), Cyan, Magenta, Yellow, Key (black) (CMYK), is researched to inform pre-press and/or design decisions 7.3 Relationship between ranges of visual colour RGB and CMYK is researched to inform pre-press and/or design decisions 7.4 Relationship between hue, greyness and substrate for tone and colour correction is researched to inform pre-press and/or design decisions 7.5 Colour matching conditions and colour matching systems are researched to inform pre-press and/or design decisions
8. Apply knowledge of substrates and consumables	8.1 Range of substrates used for each printing process is researched 8.2 Relationship of different substrate sizes is researched to identify appropriate usage 8.3 Effects of different weights and callipers of substrates on pre-press, printing and finishing operations are researched 8.4 Effects of substrate on pre-press, printing and finishing operations are researched 8.5 Effects of different properties of ink (drying properties, fastness, gloss) on pre-press, printing and finishing operations are researched 8.6 Suitability of inks and coatings for particular finishing processes is identified
9. Acquire basic knowledge of costs of production	9.1 Main cost elements (fixed, capital, variable) in production are identified 9.2 Information required to accurately cost particular jobs is

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	determined 9.3 Ways of minimising use of materials without affecting quality of output are identified 9.4 Ways of maximising efficiency of resources without affecting quality of output are identified
10. Acquire basic knowledge of production management requirements and systems	10.1 Types of information that need to be exchanged between different stages of production to facilitate production efficiency are identified 10.2 Systems and strategies to exchange identified information are researched 10.3 Basic principles of efficient production management are identified 10.4 Principles of effective quality management are identified

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.2, 1.3, 1.4, 2.1, 2.3, 2.4- 2.6, 3.1-3.3, 4.1- 4.3, 5.1- 5.4, 6.1-6.6, 7.1-7.6, 8.1-8.6, 9.1-9.4, 10.1-10.4	Researches, comprehends and applies information extracted from various sources
Writing	1.1 ⁴	Uses appropriate vocabulary, including technical language, in written documents prepared for a range of audiences
Oral Communication	1.1	Uses appropriate vocabulary, including technical language, to interact with others
Numeracy	5.3, 8.3, 9.1, 9.2, 9.3, 9.4	- Uses mathematical techniques to estimate quantities, usage and costs - Interprets and analyses mathematical information included in texts
Navigate the	1.2-1.4, 5.4, 6.1	Maintains knowledge of the printing industry

world of work		required for current role Understands and adheres to relevant industry standards, legislative requirements and organisational policies and procedures
Get the work done	1.2, 1.3, 2.1-2.6, 3.1-3.3, 4.1-4.3, 5.1-5.4, 6.2-6.6, 7.1-7.5, 8.1-8.6, 9.2-9.4, 10.1-10.4	- Plans, organises and implements systems and activities to achieve efficient and effective outcomes - Analyses and evaluates information to solve problems and make decisions - Monitors trends and identifies concepts, principles and features of approaches for use in new contexts - Understands and uses digital technologies to access, organise, store and share information

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICPKNW322 Develop knowledge of the printing and graphic arts industry	ICPKN311 Apply knowledge of the graphic pre-press sector	11 units merged into 1 due to duplication of information	Equivalent unit
	ICPKNW312 Apply knowledge of printing machining	11 units merged into 1 due to duplication of information	Equivalent unit
	ICPKNW313 Apply knowledge and requirements of the converting, binding and finishing sector	11 units merged into 1 due to duplication of information	Equivalent unit
	ICPKNW314 Apply knowledge and requirements of the screen printing sector	11 units merged into 1 due to duplication of information	Equivalent unit
	ICPKNW315 Apply knowledge and requirements of the	11 units merged into 1 due to	Equivalent unit

Code and title current version	Code and title previous version	Comments	Equivalence status
	multimedia sector	duplication of information	
	ICPKNW316 Apply knowledge and requirements of paper and printing processes	11 units merged into 1 due to duplication of information	Equivalent unit
	ICPKNW317 Apply knowledge and requirements of the ink manufacturing sector	11 units merged into 1 due to duplication of information	Equivalent unit
	ICPKNW318 Apply knowledge and requirements of mail house operations	11 units merged into 1 due to duplication of information	Equivalent unit
	ICPKNW319 Apply knowledge and processes of converting paper-based products	11 units merged into 1 due to duplication of information	Equivalent unit
	ICPKNW320 Apply knowledge and requirements of information technology systems in the printing industry	11 units merged into 1 due to duplication of information	Equivalent unit
	ICPKNW321 Apply knowledge and requirements of digital production	11 units merged into 1 due to duplication of information	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for ICPKNW322 Develop knowledge of the printing and graphic arts industry

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Performance Evidence

Evidence of the ability to:

- use appropriate vocabulary and terminology in written and oral communications with tradespeople, colleagues, management or clients
- document current with trends in the printing industry
- apply relevant legislative and workplace requirements when completing tasks
- conduct research to determine image type, output settings, output requirements and output devices for different jobs
- conduct research to determine the correct process for a print job
- conduct research to determine the correct process for a converting or finishing job
- use a colour management system to determine colour requirements for a print job
- conduct research to determine appropriate substrate and ink for different print jobs
- accurately plan, cost and document a print job.

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

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- describe legislative and enterprise requirements that affect work practice
- describe the basic principles behind the following pre-press functions:
 - image production (typesetting, scanning, graphic arts camera)
 - image combining (manual and electronic)
 - image output (film, plates, direct to press)
- describe the basic principles of the following printing processes:
 - lithography
 - relief
 - flexography

- gravure
- pad printing
- screen printing
- digital and electronic printing
- describe the range of substrates used for each printing process
- describe designs that are appropriate for different printing processes
- describe the basic characteristics of the following converting and finishing processes:
 - guillotining
 - flat-bed and rotary cutting
 - collating
 - folding
 - adhesive
 - mechanical and thermal fastening
- describe the relationship between ranges of visual colour Red, Green, Blue (RGB) and Cyan, Magenta, Yellow, Key (black) (CMYK)
- explain the main cost elements in printing production
- explain the basic principles of efficient production management.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the printing industry and include access to:

- industry-standard technology, equipment and materials
- sources of information.

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