



Australian Government

ICPKNW311 Apply knowledge of the graphic pre-press sector

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 1.0.

Application

This unit describes the skills and knowledge required to work in or deal with individuals in the pre-press sector of the printing industry.

It applies to individuals who require a detailed technical knowledge of pre-press activities and a working knowledge of related areas. They should have skills to facilitate technical communication and be able 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 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 printing industry are monitored, on an ongoing basis, to inform personal work practices
2. Apply knowledge of government Acts and regulations	2.1 Basic principles and obligations involved in copyright, work health and safety (WHS), environmental protection, access and equity, and industrial awards are understood and followed within workplace and in personal work practices

ELEMENT	PERFORMANCE CRITERIA
3. Apply detailed knowledge of pre-press processes	3.1 Principles behind pre-press functions such as image production (typesetting, scanning, graphic arts camera), image combining (manual and electronic), image output (film, plates, direct to press) and digital workflow are understood and applied 3.2 Different types of images (line, half-tone, digital) and their uses are assessed to identify most appropriate image for given job 3.3 Different output settings (screen rulings, angles, shapes), are researched and their effects on final product are evaluated 3.4 Different types of output required for different printing processes are researched and evaluated for different jobs 3.5 Different output devices (film setters, plate setters, analogue proofs, digital proofs) are researched and evaluated for different jobs
4. Apply knowledge of printing processes	4.1 Basic principles of printing processes (lithography, relief, flexography, gravure, pad printing, screen printing, digital and electronic printing) are appraised to inform decisions made for different jobs 4.2 Types of jobs and products for each process are considered to ensure appropriate choices are made to meet client needs 4.3 Capabilities and limitations of each process are reviewed for different jobs
5. Apply knowledge of converting and finishing processes	5.1 Basic characteristics of converting and finishing processes (guillotining, flat-bed and rotary cutting, collating, folding, adhesive, mechanical and thermal fastening) are considered for different jobs 5.2 Types of processes are appraised to inform decisions made for different jobs
6. Apply knowledge of substrates and inks	6.1 Range of substrates used for each printing process is researched and evaluated for different jobs 6.2 Relationship of different paper sizes is considered for different jobs 6.3 Effects of different weights and callipers of substrates on pre-press operations are researched for different jobs 6.4 Effects of paper grain on pre-press, printing and finishing operations are researched for different jobs 6.5 Effects of different properties of ink (drying properties, fastness, gloss) on pre-press operations are researched for different jobs

ELEMENT	PERFORMANCE CRITERIA
7. Apply detailed knowledge of pre-press requirements for printing and finishing processes	7.1 Designs that are appropriate for different printing processes are explored according to different jobs 7.2 Dot gain and trapping requirements for different printing processes, inks and substrates are evaluated for different jobs 7.3 Effects of different substrates on use and positioning of trimming and folding marks are evaluated for different jobs 7.4 Criteria for evaluating suitability of pre-press outputs for printing processes are explored and implemented 7.5 Criteria for producing folding impositions are evaluated for different jobs
8. Apply knowledge of colour theory	8.1 Colour theory of additive colours (light), Red, Green, Blue (RGB), is used to inform pre-press and/or design decisions 8.2 Colour theory of subtractive colours (pigments), Cyan, Magenta, Yellow, Key (black) (CMYK), is used to inform pre-press and/or design decisions 8.3 Relationship between ranges of visual colour RGB and CMYK is used to inform pre-press and/or design decisions 8.4 Relationship between hue, greyness and substrate for tone and colour correction is used to inform pre-press and/or design decisions 8.5 Colour matching conditions and colour matching systems are used to inform pre-press and/or design decisions 8.6 Procedures that ensure effective colour management are implemented
9. Apply basic knowledge of costs of production	9.1 Main cost elements (fixed, capital, variable) in pre-press production are considered during different jobs 9.2 Information required to accurately cost jobs and means of collecting it (manual and computerised) are considered and implemented, where required, during different jobs 9.3 Ways of minimising use of materials without affecting quality of output are considered and implemented during different jobs 9.4 Ways of maximising efficiency of capital and human resources are considered and implemented during different jobs
10. Apply 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 and implementation strategies are developed 10.2 Systems (manual and computerised) that can be used to

ELEMENT	PERFORMANCE CRITERIA
	exchange information are considered and implemented during different jobs 10.3 Basic principles of efficient production management are applied during different jobs 10.4 Principles of effective quality management are considered and implemented during different jobs

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	1.3, 10.1	Researches and comprehends information in a range of text types from various sources
Oral Communication	1.1	Uses appropriate vocabulary, including technical language relevant to role and context
Numeracy	9.1, 9.2	- Uses estimation and other assessment skills to check the outcomes and decide on the appropriate accuracy for the outcomes - Interprets and analyses a range of mathematical information that is used in familiar and routine tasks - Represents the mathematical information in a form that is personally useful as an aid to problem solving
Navigate the world of work	1.2, 1.3, 2.1, 8.6	- Maintains knowledge of the printing industry required for current role - Complies with legislative requirements and follows organisational policies and procedures relevant to own role
Get the work done	1.2, 1.3, 3.1-3.5, 4.1-4.3, 5.1, 5.2, 6.1-6.5, 7.1-7.5, 8.1-8.6, 9.2-9.4, 10.1-10.4	- Takes responsibility for planning and organising own workload using analytical processes to decide on a course of action, and assembles the resources required - Recognises the potential of new approaches to enhance work practices and outcomes, and generates new ideas while regularly reviewing priorities and performance during implementation - Monitors trends and identifies concepts, principles and features of approaches in use in other contexts, and redesigns these to suit own situation

		• Applies formal problem-solving processes when tackling an unfamiliar problem • Uses a range of digitally based technology and applications to access and filter data, and extract, organise, integrate and share relevant information in increasingly effective ways
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICPKNW311 Apply knowledge of the graphic pre-press sector	ICPKN311C Apply knowledge of the graphic pre-press sector	Updated to meet Standards for Training Packages	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 ICPKNW311 Apply knowledge of the graphic pre-press sector

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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
- keep up to date 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
- apply the correct process for a print job
- apply 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 pre-press 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:

- special purpose tools, equipment and materials
- industry software packages.

Assessors must satisfy NVR/AQTF assessor requirements.

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