



Australian Government

Department of Education, Employment and Workplace Relations

ICPKN316C Apply knowledge and requirements of paper and printing processes

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to work in or deal with the paper merchant area of the printing industry; that is, a working knowledge of related areas and a detailed knowledge of specific paper related operations. It facilitates technical communication and the ability to work as a team member.
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Application of the Unit

Application of the unit	This unit covers preparation of a person working in or dealing with the paper merchant area of the printing industry. This unit underpins all Certificate III level units of competency related to the paper merchant area.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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. 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 the 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, OHS, environmental protection, access and equity and industrial awards are understood in relation to the workplace 2.2. The basic principles and obligations involved in copyright, OHS, environmental protection, access and equity and industrial awards are followed in personal work practices
3. Apply knowledge of pre-press processes	3.1. 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) and digital workflow are understood and used in the production process where applicable 3.2. Different types of images (line, half-tone) and their use are understood 3.3. Different output settings eg screen rulings and angles, shapes, and how they affect final product are understood 3.4. The different types of output required for different printing processes are understood 3.5. Different output devices eg film setters, plate setters, analogue proofs, digital proofs are understood
4. Apply knowledge of printing processes	4.1. Basic principles of the following printing processes: lithography, relief, flexography, gravure, pad printing, screen printing, digital/electronic printing are understood and are used to inform production processes 4.2. The types of jobs and products for which each process is appropriate are understood and used to inform production decisions 4.3. The capabilities and limitations of each process are understood and used to inform production decisions
5. Apply knowledge of converting and finishing processes	5.1. Basic characteristics of the following converting and finishing processes: guillotining, flat-bed and rotary cutting, collating, folding, adhesive, mechanical and

ELEMENT	PERFORMANCE CRITERIA
	thermal fastening are understood and used to inform production processes 5.2. The types of jobs and products for which each process is appropriate are understood and used to inform production processes

ELEMENT	PERFORMANCE CRITERIA
6. Apply detailed knowledge of paper and printing processes	6.1. The relationship of different paper sizes is understood and used to inform production processes 6.2. Different weights, callipers, bulk, density and opacity of paper and how they affect pre-press, printing and finishing operations and end uses are understood and used to inform production processes 6.3. Paper grain and how it affects pre-press, printing and finishing operations are understood and used to inform production processes 6.4. Moisture content, porosity and ink absorbency and how they affect pre-press, printing and finishing operations are understood and used to inform production processes 6.5. Gloss, smoothness and surface strength and how they affect pre-press, printing and finishing operations are understood and used to inform production processes 6.6. Permanence, durability and acidity and alkalinity of paper and how they affect pre-press, printing and finishing operations and end uses are understood and used to inform production processes 6.7. Bursting strength, folding endurance, tensile strength and tearing resistance and how they affect printing and finishing operations and end uses are understood and used to inform production processes
7. Apply detailed knowledge of paper grades and colours	7.1. Paper types and grades and end uses for each type and grade are understood and used to inform production processes 7.2. The differences between wood pulp, rag and recycled papers and appropriate end uses are understood and used to inform production processes 7.3. Colour matching processes are understood and used to inform production processes 7.4. The effect of different paper colours on printing operations is understood and used to inform production processes
8. Apply detailed knowledge of paper handling and storage procedures	8.1. Ideal storage conditions for different types and grades of paper are understood and used to inform production procedures 8.2. The advantages and disadvantages of different packing and delivery systems are understood and used to inform production procedures
9. Apply basic knowledge of costs of production	9.1. The main cost elements (fixed, capital and variable) in production are understood and applied in the workplace

ELEMENT	PERFORMANCE CRITERIA
	9.2. The information required to accurately cost jobs and the means of collecting it (manual and computerised) are understood and applied in the workplace 9.3. Ways of minimising use of materials without affecting the quality of output are understood and applied in the workplace 9.4. Ways of maximising efficiency of capital and human resources are understood and applied in the workplace

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- OHS in relation to operating machinery such as safely switching off machinery before cleaning is started
- communication of ideas and information by accurately using correct printing industry terminology and vocabulary
- collecting, analysing and organising information by understanding and applying basic principles and obligations of OHS in the workplace
- planning and organising activities by considering and implementing, where required, basic principles of efficient production management
- teamwork when implementing procedures that ensure effective colour management
- mathematical ideas and techniques by understanding and applying the information required to accurately cost jobs
- problem-solving skills by considering and implementing, where required, ways of maximising efficiency of capital and human resources during different jobs
- use of technology by understanding and using the basic principles of the selected printing process

Required knowledge

- unit underpins all Certificate III level units of competency related to the paper merchant area

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

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

Evidence of the following is essential:

- assessor must be satisfied that sufficient knowledge and understanding of paper and related production processes (as outlined in each Element) have been demonstrated so that job procedures, requirements and modifications can be intelligently discussed in some detail with a tradesperson, production manager or client
- successful assessment of Certificate III level units of competency related to the paper merchants area
- evidence for assessment may be gathered from assessment of the unit of competency alone or through an integrated assessment activity.

Context of and specific resources for assessment

Assessment must ensure:

- assessment may take place on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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.

<i>Level of knowledge</i> may include:	• knowledge required to intelligently discuss job procedures, requirements and modifications with a tradesperson, production manager or client.
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Unit Sector(s)

Unit sector	
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Competency field

Competency field	Holistic Knowledge
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Co-requisite units

Co-requisite units		