

Title	Demonstrate knowledge of colour and its management for the print industry		
Level	4	Credits	20

Purpose	People credited with this unit standard are able to: demonstrate knowledge of colour and how it is perceived, demonstrate knowledge of colour gamuts, spaces and ICC profiles; describe procedures for measuring colour for printing; analyse the working environment for light and the viewing of colour, and identify improvements which could be made to standardise viewing conditions.
----------------	---

Classification	Printing > Digital Processes for Print
-----------------------	--

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:
 - Copyright 1994;
 - Health and Safety at Work Act 2015;
 - Privacy Act 2020;
 - Resource Management Act 1991.

Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

- 2 Definitions

LAB refers to the CIE LAB colour space (properly CIE L*a*b*), capable of representing all possible colours. This uses three variables, a lightness, L* (L-star) and colour values on a red-green axis (a*) and a blue-yellow axis (b*).

ICC refers to the International Color Consortium, an organisation dedicated to developing and implementing colour management throughout industry, and who was responsible for developing the 'ICC Profile' specification.

Workplace procedures refer to organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, manufacturer's requirements, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the print sector.

3 Assessment information

Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, workplace procedures and legislative requirements.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of colour and how it is perceived.

Performance criteria

1.1 Describe colour, as perceived by an observer, in terms of wavelengths of light, and the three types of cone cells in an observer's eyes.

1.2 Describe colour models are in terms of their components.

Range must include but is not limited to – RGB (red, green and blue), CMYK (cyan, yellow, magenta, black), LAB.

1.3 Describe the perception of colour in objects, as perceived by an observer, in terms of wavelengths of light reflected by the object.

1.4 Describe the perception of colour from a monitor (display unit), as perceived by an observer, in terms of emitted light and the RGB colour model.

1.5 Describe light sources in terms of colour temperatures.

Range must include but is not limited to – Kelvin scale.

1.6 Describe the perception of colour in objects, as perceived by an observer, in terms of the colour temperature of the viewing light.

Outcome 2

Demonstrate knowledge of colour gamuts, spaces and ICC profiles.

Performance criteria

2.1 Describe the relationship between colour gamuts and colour spaces.

2.2 Describe use of ICC profiles in a workplace in terms of their purpose.

Outcome 3

Describe procedures for measuring colour for printing.

Performance criteria

- 3.1 Describe procedure for measuring monitor (display) colour in terms of transmitted light, analysed by a monitor optimiser.
- 3.2 Describe procedure for measuring colour on a substrate in terms of reflected light and colour value (chromaticity).
- 3.3 Describe procedure for measuring ambient light in terms of lux, candela and Kelvin.

Outcome 4

Analyse the working environment for light and the viewing of colour, and identify improvements which could be made to standardise viewing conditions.

Performance criteria

- 4.1 Analyse the current working environment for viewing colour in terms of ambient light.
- Range electric light sources, sunlight.
- 4.2 Identify and analyse improvements which could be made to standardise the current working environment for viewing colour.

Replacement information	This unit standard replaced unit standard 24514 and unit standard 24515.
--------------------------------	--

Planned review date	31 December 2027
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 September 2013	31 December 2025
Review	2	30 March 2023	N/A

Consent and Moderation Requirements (CMR) reference	0013
--	------

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.