

Higher National Unit Specification

General information for centres

Unit title: Printing: Quality Control

Unit code: FOPS 34

Unit purpose: This Unit is designed to enable candidates to evaluate quality control procedures used within the printing industry. This Unit may be taken as part of a course of study in Printing or by candidates in relevant employment.

On completion of the Unit the candidate should be able to:

- 1 Describe the range of quality variables within print production.
- 2 Describe the relationship between Quality Control, Quality Assurance and Total Quality Management.
- 3 Evaluate control techniques used within a quality framework.

Credit points and level: 1 HN Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. Candidates should have knowledge of printing methods. This may be demonstrated by possession of the HN Unit *Printing Production Processes* at SCQF level 7, an equivalent qualification or relevant work experience.

Core Skills: There may be opportunities to gather evidence towards the Core Skill of Problem Solving at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Assessment: Outcome 1 will be assessed by the submission of a report or completed fault identification pro formas. Assessment will be carried out under closed-book controlled conditions.

Outcome 2 will be assessed by extended response questions or a case study carried out under closed-book controlled conditions.

Outcome 3 will be assessed by the submission of a report or completed pro formas. Assessment will be carried out under open-book supervised conditions.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, knowledge and/or skills, and evidence requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the knowledge and/or skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Describe the range of quality variables within print production

Knowledge and/or skills

- ◆ Common pre-press production faults
- ◆ Common printing faults
- ◆ Impact of resources, materials and environment on print quality
- ◆ Production tolerances

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can identify a minimum of six quality defects in both pre-press and printing production stages.

Samples of variable quality prints will be supplied to individual candidates who will be required to correctly identify the faults and submit probable causes and resolutions.

Candidates will provide an accurate description of quality faults and defects, including the impact of resources, materials and print room environment on final print output.

Assessment guidelines

Evidence may be presented in the form of the candidate's completion of a fault identification pro forma or a report that will assess the candidate's knowledge of print production quality variables.

Outcome 2

Describe the relationship between Quality Control, Quality Assurance and Total Quality Management

Knowledge and/or skills

- ◆ Concept of quality
- ◆ Benefits and techniques of quality control
- ◆ Quality assurance systems: component documentation, methods and standards
- ◆ Total Quality Management: tools and documentation

Higher National Unit specification: statement of standards (cont)

Unit title: Printing: Quality Control

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and skills by describing the relationship between Quality Control, Quality Assurance and Total Quality Management. The description should correctly include:

- ◆ the concept of quality
- ◆ benefits and techniques of quality control
- ◆ an outline of quality assurance systems found in the print industry
- ◆ an outline of what is meant by total quality management

Assessment guidelines

This Outcome may be assessed by the means of extended response questions or a case study report produced by the candidate that demonstrates comprehension of the relationship between quality control, quality assurance and Total Quality Management.

Outcome 3

Evaluate control techniques used within a quality framework

Knowledge and/or skills

- ◆ Instrumentation
- ◆ Quality parameters
- ◆ Inspection led control methods
- ◆ Standard procedures in calibration of resources
- ◆ Quality control aids and devices

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and skills by showing that they can evaluate control techniques used within a quality framework. The candidates will use instrumentation to accurately measure the density values of quality control aids on four printed sheets. The density values will be recorded and each of the printed sheets correctly evaluated for conformity to quality standards. A correct evaluation of the suitability of the control technique used within a quality framework will be provided by the candidate as a summary.

The assessment will be carried out under open-book supervised conditions.

The candidate will be supplied with the instructions for instrumentation, production tolerances for quality and samples which conform to quality standards. The candidate will also have access to their own preliminary work and personal notes.

Assessment guidelines

Evidence may be presented in the form of satisfactorily completed pro formas or reports.

Administrative Information

Unit code: F0PS 34
Unit title: Printing Quality Control
Superclass category: VD
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History of Changes:

Version	Description of change	Date

Source: SQA

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Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Unit specification: support notes

Unit title: Printing Quality Control

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit was developed as part of the HNC/HND Printing and is optional within these awards. It is intended for candidates taking a qualification at Higher National level in printing or who have experience in this or related fields and wish to further their knowledge and experience of quality control.

Outcome 1

It is intended that candidates will become able to identify common pre-press, press and finishing faults and be capable of providing their causes and possible resolutions.

Common print faults will include:

- ◆ Catch up
- ◆ Scumming
- ◆ Poor registration
- ◆ Set off
- ◆ Hickies
- ◆ Dot gain
- ◆ Poor trapping
- ◆ Dot loss
- ◆ Mottle
- ◆ Colour variation

Outcome 2

Candidates will be provided with an overview of the differences and the relationship between Quality Control, Quality Assurance and Total Quality Management. Topics and terminology should include:

- ◆ Inspection led quality control procedures
- ◆ ISO 9000 documentation
- ◆ Statistical process control
- ◆ Quality manuals
- ◆ Quality circles
- ◆ Audit procedures
- ◆ Registration bodies
- ◆ Organisational culture
- ◆ 'Fitness for purpose'

Higher National Unit specification: support notes (cont)

Unit title: Printing Quality Control

Outcome 3

Quality control instruction, aids and devices. These may include some of the following:

- ◆ Densitometer
- ◆ Spectrophotometer
- ◆ Colorimeter
- ◆ Color cue
- ◆ CIE LAB colour system
- ◆ XYZ and Munsell
- ◆ Printability test forms
- ◆ Colour management systems
- ◆ Proofing systems
- ◆ Viewing booths
- ◆ 'Closed loop' systems
- ◆ Temperature and humidity measuring instruments
- ◆ Paper testing instruments

Guidance on the delivery and assessment of this Unit

The Unit delivery will cover the differences between inspection led, documentation led and management led systems.

It is intended that candidates will be able to use control instrumentation that will include densitometers, spectrophotometers, colorimeters, colour matching devices, viewing booths and colour management methods.

Quality control bars and printability test forms will be used when appropriate.

Outcome 1

Candidates should be provided with:

- ◆ A range of printed sheets that contain common print faults with possible causes and cures
- ◆ Examples of pre-press faults that cause poor final print quality
- ◆ Examples of poor finishing of the final product

The assessment for Outcome 1 will involve the identification of print faults. The candidates will be provided with printed sheets and asked to identify the fault(s) and provide probable causes and resolutions.

Outcome 2

A comparison of the relationship between Quality Control, Quality Assurance and Total Quality Management should be discussed. It is important that candidates understand the importance of engendering a quality culture within the organisation.

Higher National Unit specification: support notes (cont)

Unit title: Printing Quality Control

The assessment for Outcome 2 may involve the production of evidence in the form of extended responses to questions or a case study report. The candidate will be required to demonstrate comprehension of the relationship between Quality Control, Quality Assurance and Total Quality Management.

Outcome 3

Candidates will be given demonstrations of the use of quality control instruction, aids and devices.

The assessment for Outcome 3 may involve candidates successfully completing a pro forma sheet to record the printability characteristics of a supplied printed sheet containing quality control aids.

A densitometer or a spectrophotometer may be used to measure the sheet and a comparison should be drawn between the printed sheet and the exemplar proof.

Opportunities for developing Core Skills

There may be opportunities to further develop and extend the core skill, 'Problem Solving' at SCQF level 5. The Unit does not seek to embed the skill as a development of all elements is seen as a likely pre-requirement of the Unit. There are, however, indications given within the knowledge and skills statements of areas where Core Skill elements may be further reinforced.

As part of the work in this Unit the candidate will be required to determine whether the quality of printed work meets or does not meet required standards. If the work does not meet the standards the reason(s) for the lack of quality and the action(s) which should be carried out to rectify the problem(s) should be identified in order that work which conforms to the standard for quality is produced.

Open learning

This Unit is suited to delivery by distance learning provided the candidates have access to appropriate production and quality control equipment. Candidates attending college will have the advantage of involvement with presentations, the opportunity of group interaction and question and answer sessions.

If this Unit is delivered by open learning, arrangements will need to be made to ensure the authenticity of the candidate's work. This could be done by individually questioning candidates or asking them to attend a supervised assessment event.

For further information and advice, please refer to the SQA guide *Assessment and Quality Assurance for Open and Distance Learning* www.sqa.org.uk.

Higher National Unit specification: support notes (cont)

Unit title: Printing Quality Control

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative Outcomes for Units. For information on these, please refer to the SQA document *Guidance on Alternative Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on SQA's website: **www.sqa.org.uk**.

General information for candidates

Unit title: Printing Quality Control

This Unit is designed to enable you to carry out quality control procedures used within the printing industry. The Unit has three main areas, each the subject of a separate Outcome.

In Outcome 1 you will learn how to identify common faults, their causes and possible remedies in the areas of pre-press, press and finishing. In order to do this you will be provided with samples of printed sheets showing faults for you to identify, determine their cause and recommend action to resolve them.

In Outcome 2 you will develop an understanding of the concept of quality, the benefits and techniques of Quality Control, Quality Assurance systems, tools and documentation used in Total Quality Management. You will then be given a broad overview of the principles and relationship between Quality Control, Quality Assurance and Total Quality Management Systems.

In Outcome 3 you will gain experience in using a range of quality control instrumentation and aids to measure printed sheets against standard exemplar proofs to determine the print quality and acceptability. Instrumentation will include for example a densitometer and/or spectrophotometer.

The Unit provides you with the opportunity to develop your problem solving skills as a result of identifying print production problems and relating these problems to areas of quality control and recommending appropriate actions to return print production to required standards. In order to do this you will have opportunities to develop your ability to work in an organised manner and solve problems.