

SQA Advanced Unit Specification

General information for centres

Unit title: Management of Quality

Unit code: HW7W 47

Unit purpose: This unit affords candidates the opportunity to understand and explain the policies, procedures and processes involved in the management of Quality. It also allows candidates to evaluate these processes when making decisions as to their usage and/or implementation.

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

- 1 Identify the principle skills required by Quality Management practitioners.
- 2 Explain the requirements for Quality Management Systems (QMS).
- 3 Explain the need for Total Quality Management (TQM).
- 4 Measure Quality as a cost.
- 5 Identify legal issues for Quality.

Credit points and level: 2 SQA Credits at SCQF level 7: (16 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 National 1 to Doctorates.*

Recommended prior knowledge and skills: Candidates would normally be expected to have competence in communication and numeracy skills at SCQF level 5 or similar qualifications or experience. It is recommended that candidates should have completed the SQA Advanced unit Fundamentals of Quality (HW7V 47) or the equivalent prior to undertaking this unit.

Core Skills: There are opportunities to develop the Core Skills of Communication at SCQF level 6, Information Technology at SCQF level 5 and Numeracy 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: Assessments for this unit should be carried out through assessments appropriate to each of the Quality management processes noted in the Outcomes.

A holistic approach may be taken to assess Outcomes 1 and 2 using a real workplace scenario or a specified case study. The candidate could produce a report that explains the Quality management skills required to implement and maintain a Quality Management System (QMS).

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Outcome 3 could be assessed through research and the evaluation of current best practice TQM applied in modern organisations.

Outcome 4 could be assessed using a specified set of data which candidates would analyse, interpret and provide findings for.

Outcome 5 could be assessed in the form of open-book with extended responses under controlled conditions

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SQA Advanced 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

Identify the principle skills required by Quality Management practitioners

Knowledge and/or skills

- ◆ Planning
- ◆ Organising
- ◆ Communicating
- ◆ Leadership and motivating
- ◆ Controlling
- ◆ Maintaining Quality

Evidence Requirements

A combined report produced by the candidate for outcomes 1 and 2 will demonstrate that candidates can identify all of the above knowledge and skills while implementing a QMS through the main stages as specified in outcome 2. The report requires the candidate to:

- ◆ Identify where planning, organising, communicating, leading, motivating, controlling and maintaining skills are used during the implementation of a QMS.

Evidence must be provided using the current internationally recognised Quality Management System standard.

Assessment guidelines

Outcomes 1 and 2 could be jointly assessed to demonstrate that the principle skills for Quality Management are inextricably linked to the successful implementation and maintenance of a QMS. Candidates could either use a real workplace scenario or be provided with a suitable case study by the presenting centre; the report should be 1750 to 2000 words in length.

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Outcome 2

Explain the requirements for Quality Management Systems (QMS)

Knowledge and/or skills

- ◆ Main requirements specified in the current internationally recognised QMS standard
- ◆ GAP analysis
- ◆ Management of a QMS
- ◆ Internal Audit and Review of a QMS
- ◆ Role of Accredited Certification Bodies
- ◆ Continuous improvement

Evidence Requirements

Candidates must produce evidence to cover all knowledge and skills items of Outcomes 1 and 2. They must be able to show that in terms of an internationally recognised Quality Management Standard they can:

- ◆ Conduct a GAP analysis of their chosen organisation's processes against the current internationally recognised Quality Management System Standard requirements.
- ◆ Explain the documentation requirements for a QMS — Quality Manual, Process Procedures, Work Instructions, Quality Plans and Records/Forms.
- ◆ Explain the main stages of Internal Audit and Review for the implemented QMS.
- ◆ Describe the process for seeking approval for a documented QMS by an Approved Certification Body.
- ◆ Explain the need for continuously improving the QMS.

Assessment guidelines

The assessment guidelines for this Outcome are as noted for Outcome 1.

Outcome 3

Explain the need for Total Quality Management (TQM)

Knowledge and/or skills

- ◆ The philosophy of TQM
- ◆ The cultural changes required by a TQM drive
- ◆ The value of external and internal customers
- ◆ The message of the Quality Gurus

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills of TQM by showing that they can produce a report which:

- ◆ Explains the key themes of a TQM culture.
- ◆ Explains what can be expected of a mature TQM set up.
- ◆ Describes how external and internal customers are at the heart of a TQM initiative.
- ◆ Identifies the messages and philosophies of at least three Quality Gurus that underpin TQM initiatives.

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Assessment guidelines

Outcome 3 could be assessed through research and the evaluation of current best practice TQM applied in modern organisations. The presenting Centre should direct candidates to suitable sources for conducting a meaningful piece of research. A research report of 1,000 to 1,250 words would sufficiently reflect the Evidence Requirements. Alternatively a closed book assessment consisting of a series of restricted response questions for the first three knowledge and/or skills requirements and a short report of 500 words for the fourth knowledge and/or skills requirement. Should this method be chosen, it is recommended that one hour be allocated for this task.

Outcome 4

Measure quality as a cost

Knowledge and/or skills

- ◆ Prevention, Appraisal and Failure costs (PAF) Model of Quality Costs
- ◆ Comparison between the elements of PAF Quality and non-Quality costs
- ◆ The Process Model for Quality Costing

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can:

- ◆ Analyse a given set of data that can be transformed into meaningful Quality cost information.
- ◆ Make use of the analysis to give advice to an organisation on how to improve Quality costs.
- ◆ Present the analysis in a suitable format using appropriate data. The analysis must cover one of the following Quality cost models:
 - the PAF model
 - or
 - the Process Model

The analysis and findings must be suitable for presentation to senior management.

The current nationally recognised Quality Costing Standard must be used to fulfil the Evidence Requirements.

Assessment guidelines

Outcome 4 could be assessed through the use of standard procedures for documenting Quality costs and findings as stated in the relative sections of BS 6143. Care should be taken by the presenting centre that the candidate evidence is authentic.

Outcome 5

Identify legal issues for Quality

Knowledge and/or skills

- ◆ The importance of legally binding contracts between two or more parties
- ◆ The impact of UK legislation on Quality Management Systems
- ◆ The significance of European regulations, directives, decisions and recommendations on Quality Management Systems
- ◆ Consumers rights for products or services

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Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can:

- ◆ Describe the main requirements of contract law between two or more parties and its links to contract review as stated in the current internationally recognised QMS standard.
- ◆ Describe the latest UK and/or European Legislation that directly impacts on Quality Management Systems.
- ◆ Identify the consequences of strict liability with regard to consumer rights for products and services.
- ◆ Identify the main types of product recall (high, medium and low hazards) and apply the stages involved in a product recall exercise.

Assessment guidelines

Outcome 5 could be assessed in the form of open-book with extended responses for each of the Evidence Requirements under controlled conditions. It is recommended that one hour be allocated to this task.

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Administrative Information

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SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of SQA Advanced Qualifications.

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SQA Advanced Unit specification: support notes

Unit title: Management of Quality

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 80 hours.

Guidance on the content and context for this unit

This unit is likely to form part of a Group Award designed to provide candidates with knowledge and skills in the field of Quality. The unit may also be undertaken as a stand-alone unit that introduces candidates to the main aspects of Quality Management. The unit has been designed to enable the candidate to evaluate the main Quality Management processes and apply them to appropriate situations.

Outcomes 1 and 2 — candidates will need to know about:

- ◆ Identifying, planning, implementing and maintaining a Quality Management System (QMS). The Deming Cycle or PDCA is an excellent tool for demonstrating this and is an integral part of a QMS such as ISO 9001.
- ◆ Conducting a GAP analysis, ie compare the quality management system requirements with the current position and identify gaps of the organisation prior to implementation of QMS such as ISO 9001.
- ◆ The importance of applying good organisational skills, communication, leadership and motivation to the QMS initiative cannot be overstated.
- ◆ The main documentation used to formulate a documented QMS — Quality Manual, Process Procedures, Work Instructions, Quality Plans and Records/Forms.
- ◆ Methods of controlling and maintaining the QMS through audits and continuously improving the QMS through Quality Management Reviews.
- ◆ The stages of internal and external audits.
- ◆ The route to approval by a recognised Certification Body.

Outcome 3 — candidates will need to know about:

- ◆ The successes and failures of Total Quality Management (TQM) initiatives so as to make rational judgements on its use.
- ◆ The time scales involved in putting a TQM initiative in place.
- ◆ The often radical cultural changes required when going down a TQM route. Involving every person in every department of a firm who must work together to eliminate errors and prevent waste. The concept of striving for zero defects.
- ◆ The main philosophies of the Quality Gurus and their impact on TQM drives — Deming, Juran, Feigenbaum, Crosby, Ishikawa, Shingo and Taguchi. Shingo should be referenced in relation to continuous improvements in manufacturing and reducing waste, Crosby should be acknowledged when describing Zero Defects/Right first Time and so on.
- ◆ Mature TQM set-ups being expected to deliver greater efficiencies, lower costs, improve Quality, better reputation and greater market share.
- ◆ No customer means no business and the undisputed significance of good customer relationships. The external and internal customer being an integral part of a TQM organisation.

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Outcome 4 — candidates will need to know about:

- ◆ The existence and application of Quality Costs found in BS 6143 (1990 & 1992) as a valued aid to achieving Quality and business goals and objectives.
- ◆ Why PAF is most appropriate for use in manufacturing organisations and its limitations.
- ◆ Categorising Quality cost elements and identifying them as Quality and Non-Quality costs.
- ◆ Quality costs ratios and their application.
- ◆ Why The Process Cost Model is most suited to service organisations or departments.
- ◆ The Cost of Conformance and the Cost of Non-Conformance.
- ◆ Using a raw set of data and transforming it into tabulated findings and recommendations for senior management to act upon – outlining suitable alternatives.
- ◆ The format for presentation of Quality Costs contained in the standard.

Outcome 5 — candidates will need to know about:

- ◆ The main aspects of contract law and how this interrelates with the requirements of the contract review clause of ISO 9001. This should include reference to a simple contract; ie there are three elements in a simple contract:
 - the parties must reach agreement (offer and acceptance)
 - the parties must have the legal capacity to contract
 - the parties agree to be legally bound
- ◆ The "implied conditions" in the Sale of Goods Act — goods are fit for the purpose and of merchantable Quality.
- ◆ Strict liability and the Consumer Protection Act.
- ◆ What the European Commission is, how it is formed and functions.
- ◆ European Regulations, Directives, Decisions and Recommendations and how these impact on UK companies.
- ◆ The importance and sequence of events used in a product recall exercise for low, medium and high degree of risk to consumers.

Assessment should reflect an appreciation of the legal requirements that Quality practitioners should be aware of rather than interpreting and practising them as legal specialists. Latest version of: European legislation; Consumer Protection Act, 1987; General Product Safety Regulations, 1994; and Sale of Goods Act, 1979 (as amended by the Sale and Supply of Goods Act, 1994) should be referenced

Guidance on the delivery and assessment of this unit

It is recommended that outcomes and associated assessments are contextualised as appropriate. Formative assessment should be seen as an ongoing part of delivery prior to summative assessments.

Candidates must have access to latest legislation, regulations, codes of practice, standards and specifications.

Lecturer lead discussions and support notes should be enhanced by reference to relevant text books, case studies, recognised web sites, specialist guests and where possible real workplaces. It is anticipated that candidates undertaking the unit will be from a variety of industrial backgrounds and teaching methods and delivery by the presenting centre should reflect this. Candidates should be encouraged to relate theory and generic models to practice wherever possible.

Assessment strategies should complement the associated outcomes. For example; Outcome 1 and 2 in the workplace would normally be conducted and reported through a formal document outlining the main steps to gaining and maintaining approval to ISO 9001. For Outcome 3 it would be unwise to

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go down a TQM route without researching established TQM initiatives prior to undertaking this major drive and so on.

Reference to the word “product” should be interpreted in the broadest possible sense, in terms of a physical product or services or the resulting products of a service.

Opportunities for developing Core Skills

The delivery and assessment of this unit may contribute towards the ‘Reading’ and ‘Writing’ components of the Core Skill of Communication at SCQF level 6 because of the requirement to read textbooks, Standards and various Quality Management System documentation. The formative and summative assessments for Outcomes 1, 2 and 3 requires candidates to provide written reports which contribute towards the ‘Writing’ component.

The delivery and assessment of this unit may also contribute towards the Core Skill of Information Technology at SCQF level 5 because of the requirement in Outcome 4 to graphically analyse and present Quality Cost data requiring the candidate to use spreadsheets and word processing software packages. Also, Outcomes 1, 2 and 3 require that the candidate researches information on Quality issues and searching the Internet should be encouraged.

The delivery and assessment of this unit may also contribute to all components of the Core Skill of Numeracy at SCQF level 5 because of the requirement in Outcome 4 to calculate Quality Costs and to analyse Quality Costs both numerically and graphically.

Open learning

This unit is compatible for delivery by open or distance learning methods. The presenting centre would require to ensure the authenticity of candidate evidence. Additional planning and resources may be required for candidate support, assessment and Quality assurance. For further information and advice please see *Assessment and Quality Assurance for Open and Distance Learning* (SQA, February 2001 — publication code A1030).

Equality and inclusion

This unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

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General information for candidates

Unit title: Management of Quality

This unit is two credits in value at SCQF level 7. The unit is designed to develop your skills and knowledge in the Management of Quality — it reflects the requirements for Quality practitioners in a modern organisation. It is quite likely that your research, writing and presentation skills will be enhanced upon successful completion of the unit.

In Outcome 1 we consider how to prepare ourselves for carrying out duties associated with a Quality Management practitioner. These are:

- ◆ Planning
- ◆ Organising
- ◆ Communicating
- ◆ Leadership and motivating
- ◆ Controlling
- ◆ Maintaining Quality

To reinforce the need for preparing ourselves, a well-respected and famous Quality practitioner (Juran) puts it this way “Quality just doesn’t happen by itself”. We need to plan for Quality and then make sure the plan is carried out effectively by integrating the other activities noted above into our work.

Outcome 2 builds on the Quality Management Activities by looking at some of the reasons why an organisation might want to implement a formal Quality Management System and the benefits gained from doing so. ISO 9001 is a well proven way of measuring a Quality Management System operating within a company.

Outcome 3 looks at Total Quality Management (TQM) as an approach to improving the effectiveness and flexibility of business as a whole. It’s a Quality process which involves every person in every department of a firm - working together to eliminate errors and prevent waste. The benefits of making sure things are done right first time are enormous. Eminent practitioners and writers in Quality, known as the Quality Gurus, provide us with sound foundations for initiating a TQM drive.

In Outcome 4 we discover that it’s not enough in business to provide a good product or Quality service, even when achieving a high degree of customer satisfaction. All firms must meet their goals at a carefully managed cost. The true measure of the Quality effort is Quality Costs and their long term effects on a company. There needs to be a good balance between a competitive product/service and the costs of providing the product/service. This can be done through analysis of the costs of Quality.

In the last Outcome (5) of this unit we consider the need to have an **appreciation** of the law and its effect on Quality matters. A comparison could be that you would expect operators on the job to have a working knowledge about their Quality system but you wouldn’t expect them to generate the Quality manual. This guide to the rudiments of legislation is important to Quality practitioners as the courts of law look favourably upon companies that have well defined Quality Management Systems in place in terms of liability.