-SQA- SCOTTISH QUALIFICATIONS AUTHORITY

HIGHER NATIONAL UNIT SPECIFICATION

GENERAL INFORMATION

-Unit Number- **6412345**

-Superclass- **VB**

-Title- **INTRODUCTION TO OPERATIONS MANAGEMENT**

-DESCRIPTION-

GENERAL COMPETENCE FOR UNIT: Explaining the processes involved in the planning of operating systems for an organisation.

OUTCOMES

1. explain the factors involved in the design of an operating system;

2. derive the capacity requirements necessary to achieve an operating system's objectives;

3. explain the role of quality management within an operating system.

CREDIT VALUE: 1 HN Credit

ACCESS STATEMENT: Access is at the discretion of the centre.

For further information contact: Administrative Services Unit, SQA, Hanover House, 24 Douglas Street, Glasgow G2 7NQ.

Additional copies of this unit may be purchased from SQA (Publications Unit). At the time of publication, the cost is £1.50 (minimum order £5).

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STATEMENT OF STANDARDS

UNIT NUMBER: 6412345

UNIT TITLE: INTRODUCTION TO OPERATIONS MANAGEMENT

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME

1. EXPLAIN THE FACTORS INVOLVED IN THE DESIGN OF AN OPERATING SYSTEM

PERFORMANCE CRITERIA

(a) Factors influencing the location of a facility are identified correctly in terms of organisational, economic and market conditions.
(b) Explanation of the selection of a process is appropriate to volume of output and the relationship with the customer.
(c) Explanation of the selection of the layout is appropriate to the type of process employed.
(d) Characteristics of service provision are identified correctly.

RANGE STATEMENT

Processes: project; jobbing; batch; flow.

Process: make to stock; make to order.

Layouts: fixed position; process; product; cell.

Service characteristics: role of customer; instantaneous production/consumption.

EVIDENCE REQUIREMENTS

Written and/or oral evidence that the candidate has met all performance criteria and all elements of the range statement.

OUTCOME

2. DERIVE THE CAPACITY REQUIREMENTS NECESSARY TO ACHIEVE AN OPERATING SYSTEM'S OBJECTIVES

PERFORMANCE CRITERIA

(a) The nature of capacity management is identified correctly.
(b) Forecasts of demand for services and/or products are determined correctly.
(c) Evaluation of capacity requirements for different strategies is accurate for given objectives.

RANGE STATEMENT

Forecasts of demand: time series analysis; simple linear regression.

Strategies: chase; level; mixed.

EVIDENCE REQUIREMENTS

Performance evidence of one forecasting technique. Written and/or oral evidence for all other aspects of range statement.

OUTCOME

3. EXPLAIN THE ROLE OF QUALITY MANAGEMENT WITHIN AN OPERATING SYSTEM

PERFORMANCE CRITERIA

(a) Total quality management is explained correctly in the context of an operating system.
(b) Continuous improvement processes are explained correctly in the context of total quality management.
(c) Principles of a quality system are explained and correctly related to the type of operating system being managed.
(d) Explanation of analytical techniques to product and process control is effective for the situation being managed.

RANGE STATEMENT

Total quality management: definitions of quality; behavioural implications; organisational implications.

Continuous improvement processes: quality circles; Kaizen; teamworking.

Quality systems: products; services.

Analytical techniques: control charts for mean and range; cause and effect diagram; pareto distribution.

EVIDENCE REQUIREMENTS

Written and/or oral evidence that the candidate has met all performance criteria for all elements of the range statement.

MERIT A pass with merit may be awarded to a candidate who demonstrates skills to a higher order. This might be in terms of:

(a) consistency of performance;
(b) clarity of expression or presentation;
(c) originality of approach;
(d) ability to tackle unusual or open-ended problems;
(e) a greater depth of underpinning knowledge or more penetrating grasp of concepts.

ASSESSMENT

In order to achieve this unit, candidates are required to present sufficient evidence that they have met all the performance criteria for each outcome within the range specified. Details of these requirements are given for each outcome. The assessment instruments used should follow the general guidance offered by the SQA assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes.)

Accurate records should be made of the assessment instruments used showing how evidence is generated for each outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should also be kept. These records will be required for external verification.

SPECIAL NEEDS

Proposals to modify outcomes, range statements or agreed assessment arrangements should be discussed in the first place with the external verifier.

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SUPPORT NOTES

UNIT NUMBER: 6412345

UNIT TITLE: INTRODUCTION TO OPERATIONS MANAGEMENT

SUPPORT NOTES: This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

NOTIONAL DESIGN LENGTH: SQA allocates a notional design length to a unit on the basis of the time estimated for achievement of the stated standards by a candidate whose starting point is as described in the access statement. The notional design length for this unit is 40 hours. The use of notional design length for programme design and timetabling is advisory only.

PURPOSE This unit is designed to introduce the ideas and concepts of operations management to candidates who may not have any previous experience of the subject matter. It can be used as either a stand alone unit or as an introduction to the unit Operations Management Practice.

CONTENT/CONTEXT Corresponding to outcomes:

Outcome 1: Factors such as: government policy and grant aid; labour availability; housing and amenities; relationship with distribution and supply chain. Contrast relative importance of these for service and manufacturing industries. Types of production based on volume/customer should be linked to layouts and materials handling.

Range - 'instantaneous production/consumption' - refers to the fact that the service environment has to cater for the presence of the customer at the point of production.

Outcome 2: Relationship of capacity to both strategic and operational planning; time series analysis using either additive or multiplicative model; simple linear regression; implications of capacity strategies for operating system ie variation in capacity in short term involving sub-contract, short term employment of labour, changes to material plans.

Outcome 3: Definitions of quality; contribution to quality management by people such as Deming, Crosby, Juran etc; costs of quality; application of quality to both service and manufacturing environments; development of individual within TQM philosophy.

ASSESSMENT PROCEDURES Consideration may be given to the use of some form of integrated project to tie together all areas of this unit. A possible scenario for an operating system might be presented to the candidates who are then required to develop the outline of an operating system which meets these criteria.

PROGRESSION This unit provides the basis for unit 6412355 Operations Management Practice.

REFERENCES

1. Guide to unit writing.
2. For a fuller discussion on assessment issues, please refer to SQA's Guide to Assessment.
3. Information for centres on SQA's operating procedures is contained in SQA's Guide to Procedures.
4. For details of other SQA publications, please consult SQA's publications list.