

-SQA- SCOTTISH QUALIFICATIONS AUTHORITY

NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION

GENERAL INFORMATION

-Module Number- 7196077 **-Session-**1997-98
-Superclass- HC
-Title- THE MANUFACTURING INDUSTRY: AN ACTIVITY APPROACH

-DESCRIPTION-

GENERAL COMPETENCE FOR UNIT: Developing the competence necessary to complete supervised activity in a work environment relating to the manufacturing industry.

OUTCOMES

1. describe the main features of the work situation;
2. carry out allocated tasks in the work situation while supervised;
3. explain Health and Safety regulations and safe working practices appropriate to the occupation;
4. analyse the contribution made by the experience to his/her awareness of personal suitability for the vocational area.

CREDIT VALUE: 1 NC Credit

ACCESS STATEMENT: There is no access statement for this unit.

For further information contact: Committee and Administration Unit, SQA, Hanover House, 24 Douglas Street, Glasgow G2 7NQ.

Additional copies of this unit may be purchased from SQA (Sales and Despatch section). At the time of publication, the cost is £1.50 (minimum order £5.00).

NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION**STATEMENT OF STANDARDS****UNIT NUMBER:** 7196077**UNIT TITLE:** THE MANUFACTURING INDUSTRY: AN ACTIVITY APPROACH

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. DESCRIBE THE MAIN FEATURES OF THE WORK SITUATION

PERFORMANCE CRITERIA

- (a) The identification made of the main functions of the workplace is accurate.
- (b) The identification of essential equipment and facilities is accurate.
- (c) The identification of major processes involved in the work is accurate.

RANGE STATEMENT

Essential equipment: tools; raw materials.

EVIDENCE REQUIREMENTS

Evidence for each Performance Criterion should be gathered from the candidate's answers to questions. The candidate should be allowed to provide evidence by the use of his or her normal mode of communication which may be verbal or non-verbal and may include one or more of the following: speech, writing, word processing, signing, lipreading, braille, computer-assisted communication.

In relation to Performance Criteria (a) - (c) the features of the work situation which are identified should be those relating to the candidate's experience.

Reference should also be made to relevant personnel, including three or more of the following: manager, foreman, safety officer, operators.

In relation to Performance Criterion (b) the essential equipment identified should include at least three examples of tools and two examples of raw materials.

OUTCOME

2. CARRY OUT ALLOCATED TASKS IN THE WORK SITUATION WHILE SUPERVISED

PERFORMANCE CRITERIA

- (a) The allocated activities are carried out with correct sequencing, timing and organisation.
- (b) The allocated activities are carried out in a manner compatible with the ethos of the work environment.
- (c) The carrying out of tasks complies with regulations and safe working practices specified for equipment and areas.

RANGE STATEMENT

The range for this outcome is fully expressed within the performance criteria.

EVIDENCE REQUIREMENTS

Performance evidence for each Performance Criterion should be gathered from direct observation of the candidate in the workplace, or in a situation which creates the conditions and demands of the workplace. Evidence should be gathered of the candidate's competence in performing three activities. The activities should be limited to simple, supervised tasks which are an integral part of the main processes involved in the workplace.

Where the candidate's knowledge and understanding cannot be inferred from performance evidence alone, for example, understanding the reasons for correct sequencing, timing and organisation, additional evidence should be gathered from the candidate's answers to questions. The candidate should be allowed to provide evidence by the use of his or her normal mode of communication which may be verbal or non-verbal and may include one or more of the following: speech, writing, word processing, signing, lipreading, braille, computer-assisted communication.

OUTCOME

3. EXPLAIN HEALTH AND SAFETY REGULATIONS AND SAFE WORKING PRACTICES APPROPRIATE TO THE OCCUPATION

PERFORMANCE CRITERIA

- (a) The importance of Health and Safety regulations is understood correctly.
- (b) The identification of safe working practices is accurate in terms of the occupation.
- (c) The identification of the importance of safe working practices is consistent with the nature of the workplace.

RANGE STATEMENT

The range for this outcome is fully expressed within the performance criteria.

EVIDENCE REQUIREMENTS

Evidence for Performance Criteria (a)-(c) should be gathered from the candidate's answers to questions. The candidate should be allowed to provide evidence by the use of his or her normal mode of communication which may be verbal or non-verbal and may include one or more of the following: speech, writing, word processing, signing, lipreading, braille, computer-assisted communication.

In relation to Performance Criterion (a) evidence should be gathered of the candidate's comprehensive knowledge of regulations in the occupational area by identifying correctly a minimum of 6 aspects of generic Health and Safety regulations as they relate to the occupational area.

In relation to Performance Criteria (b) and (c) evidence should be gathered of the candidate's comprehensive knowledge of, and understanding of the importance of, regulations and safe working practices within an identified workplace by identifying correctly a minimum of 6 aspects of regulations and safe working practices specific to the occupational area.

OUTCOME

4. ANALYSE THE CONTRIBUTION MADE BY THE EXPERIENCE TO HIS/HER AWARENESS OF PERSONAL SUITABILITY FOR THE VOCATIONAL AREA

PERFORMANCE CRITERIA

- (a) The identification of characteristics in an employee which are required for this environment is accurate.
- (b) The identification of personal qualities is realistic.
- (c) A conclusion is drawn regarding personal suitability for the occupation.

RANGE STATEMENT

The range for this outcome is fully expressed within the performance criteria.

EVIDENCE REQUIREMENTS

The candidate should identify and evaluate his/her own personal qualities and compare these with the qualities of employees in the occupational area. The candidate should also draw a conclusion on his/her suitability for the occupation. The candidate should be allowed to provide evidence by the use of his or her normal mode of communication which may be verbal or non-verbal and may include one or more of the following: speech, writing, word processing, signing, lipreading, braille, computer-assisted communication.

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 be kept. These records will be available for external verification.

SPECIAL NEEDS

In certain cases, modified outcomes and range statements can be proposed for certification. See references at end of support notes.

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NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION**SUPPORT NOTES**

UNIT NUMBER: 7196077

UNIT TITLE: THE MANUFACTURING INDUSTRY: AN ACTIVITY APPROACH

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 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 provide the candidate with a real experience of a working environment. This experience can form the basis of vocational guidance and decisions regarding future progress. The candidate may be expected to benefit from delivery in a supported training environment, under supervision.

The unit forms part of the National Certificate Skillstart 1 award. It could also be used as a free standing unit.

SQA publishes summaries of NC units for easy reference, publicity purposes, centre handbooks, etc. The summary statement for this unit is as follows:

This unit will introduce you to basic aspects of work in the manufacturing industry and will help you to decide if the type of work is suitable for you. On completion of the unit you will be able to describe the main features of the work, explain about safety at work and carry out some tasks under supervision. You will also be able to explain whether the type of work is suitable for you.

CONTENT/CONTEXT The candidate should achieve the level of competence of someone who can demonstrate basic occupational skills. The unit should be seen in the context of the wide range of skills needed for achievement of the National Certificate Skillstart 1 award and should be integrated into practical activities in the training environment.

Any appropriate local authority or centre regulations should be taken into account with regard to supervision of candidates when outside the boundaries of the centre.

Throughout the unit, the candidate should be encouraged to develop communication skills and personal/interpersonal skills and form working relationships with colleagues and clients.

It is suggested that the unit should be delivered in an occupational placement or other occupational or training environment which allows for practical sessions of a minimum of 2 hours' duration. Tutors/trainers should use their expertise to provide detailed guidance to the candidate in the undertaking of activities.

Corresponding to outcomes:

1. Variety of different types of products, for example, chemicals; textiles; metal goods; electrical/electronics; timber products; rubber and plastics; food, drink and tobacco; building industry products; paper and paper products; printing and photographic processes; glass, china and pottery.

Variety of manufacturing processes, for example, sand casting; injection moulding; hand forging; bending; spinning, metal removal; riveting; soldering; brazing; welding; adhesive joining; turning; milling; drilling; grinding; shaping; planing; piercing; blanking; shearing.

Computer aided manufacture.

Selection of tools and raw materials.

Sequencing of tasks - preparation; operation; closing down procedures.

Following operating instructions; cleaning machinery; storage of finished goods.

Close interrelationships with quality control; storekeeping; packaging; finishing; lifting, handling and transportation.

Personnel: manager; foreman; safety officer; operators.

Establishment of working relationships with colleagues; maintaining effective ongoing relationships with clients; taking account of clients' needs; working with the team concerned with client services.

2. The practical activities should be limited to simple tasks. Awareness should be made of correct sequencing, timing and organisation. If the activities are not being undertaken in the workplace, they should be undertaken in a situation which recreates the conditions and demands of the workplace.

The candidate should be guided by the tutor/trainer on the selection of tasks on the basis of any statutory restrictions and on the feasibility of the tasks being undertaken within the timescale of the unit.

The candidate should work in accordance with the practices and standards of the occupation.

3. The candidate's understanding of Health and Safety regulations should be developed from an appreciation that regulations, generally, follow a real need. The discovery, for example, that certain materials or working practices are regularly causing illness or accidents leads to the introduction of regulations governing the use of these materials or the carrying out or modifying of the practices. The regulations will merely codify the rules that a sensible and caring person would wish to follow in the working environment to avoid harmful consequences.

The candidate should understand the need for a high standard of personal safety, for example, the need to wear protective clothing, such as boots, overalls, gloves, ear-defenders, goggles, masks.

The candidate should be introduced to aspects of Health and Safety and safe working practices; maintaining a safe environment; safe use of gas, electric and lighting appliances; importance of tidiness to reduce hazards; safe use of equipment; reporting of accidents; recognising and reporting potential hazards; fire, emergency and health and safety procedures; safety officer; member of staff with first aid training; First Aid Box.

4. The working environment must be realistic to enable the candidate to have a realistic awareness of his or her suitability for the vocational area.

The candidate should assess his or her personal suitability to the vocational area, recognising how his or her individual contribution can affect the quality and success of work and recognising why attitude and behaviour are important and the differences they can make.

The tutor/trainer should provide an atmosphere in which the candidate feels confident in discussing issues. The candidate's wishes for confidentiality should be respected provided that this does not prohibit the necessary evidence being provided.

APPROACHES TO GENERATING EVIDENCE The candidate should be encouraged to help in the planning and organisation of activities.

Industrial visits to typical manufacturing industry sites. Videos, group discussion, demonstrations. Tutor/trainer exposition in which should be described the staff employed in the industry, how each part operates and the skills and aptitudes required for the various employment opportunities. Manufacturers' catalogues and technical publications would be useful resource materials.

Practical work placement should be arranged wherever possible. Preparation for placement through demonstrations, simulations, visits, group discussions.

Ongoing discussion and formative assessment should take place throughout the unit.

Where appropriate, the candidate should be re-assessed following further opportunities for learning.

Candidates may wish to maintain a log book to record tasks undertaken.

ASSESSMENT PROCEDURES Centres may use the Instruments of Assessment which are considered by tutors/trainers to be most appropriate. Examples of Instruments of Assessment which could be used are Practical Exercises, Personal Interviews, Short Answer Questions and Restricted Response Questions. When answering questions, the candidate should use his or her normal mode of communication. It is the responsibility of the centre to ensure that an accurate record of the candidate's response is retained as evidence of the candidate's competence.

Outcome 1: Restricted Response Questions could be used to gather evidence for this outcome. It is suggested that 3 Restricted Response Questions are used, one question on each performance criterion. The questions should be constructed to cover as wide a range of content as is necessary to enable the candidate to provide evidence of a comprehensive knowledge of the area. The questions constructed by the assessor should be in a format which is appropriate to the candidate's normal mode of communication. This could include diagrams and other visual aids. Where further or clearer answers are required from the candidate to secure full evidence of ability to meet the criteria, supplementary questions which are open in nature (ie. do not lead the candidate) should be asked. Supplementary questions would not be appropriate where the candidate's first answer clearly showed an inability to meet the performance criteria.

Restricted Response Questions will allow the candidate to make reference to relevant staff and the different jobs undertaken by staff.

Satisfactory performance will be demonstrated by the candidate answering all questions correctly.

Outcome 2: Practical Exercises could be used to gather evidence for all performance criteria. The candidate should undertake three separate activities. A checklist may be used to record candidate performance.

It is suggested that the candidate should be observed in placement (or in a practical exercise which simulates a typical work environment) of a minimum of 10 hours' duration. Sessions should not normally last less than two hours. The timescale should be managed and monitored in accordance with the timescale for normal working practices in the occupational area. The candidate should be allocated a range of simple tasks, typical to the work situation. The tasks should be very closely supervised and, where appropriate, should be undertaken on the basis of assisting skilled workers.

It is suggested that 3 Short Answer Questions are used on each occasion to gather evidence of the candidate's understanding of the reasons for correct sequencing, timing and organisation. There should be one question on each of sequencing, timing and organisation.

Outcome 3: A Personal Interview could be used to gather evidence of the candidate's knowledge and understanding of Health and Safety regulations and safe working practices. During the interview, it is suggested that 12 questions should be asked of the candidate. The questions should cover as wide a range of content as is necessary to enable the candidate to provide evidence of a comprehensive knowledge of regulations/safe working practices in the occupational area. Six of the questions should relate to generic Health and Safety regulations and 6 of the questions should relate to Health and Safety

regulations and safe working practices specific to the occupational area. The questions constructed by the assessor should be in a format which is appropriate to the candidate's normal mode of communication. This could include diagrams or other visual aids. The responses should include evidence of the candidate's understanding of the value of regulations/safe working practices.

Outcome 4: A Personal Interview could be used to enable the candidate to identify and evaluate his or her personal qualities and to compare these with the qualities of employees in the occupational area. The candidate may wish to complete a personal profile.

In making a summative assessment of this outcome, assessors may find it valuable to use a checklist. This checklist would draw the candidate's attention to the characteristics which affect an individual's suitability for work in the area covered by the unit. The candidate would also be required to make a judgement about his or her suitability with regard to each of the characteristics in relation to the occupational area covered by the unit.

An example, in general terms, of the type of checklist which could be used is detailed below and this will have to be adapted for the specific occupational area and the level of understanding of the candidate. This checklist may be used for self-assessment or to structure interviews.

Specification for a summative checklist

The main headings for such a checklist might be:

<u>Characteristics</u>	<u>Rating</u>	<u>Comments</u>
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Among the types of characteristics which would have to be devised/selected to match the occupational area would be:

interest in the area

relations with clients

enjoyment of work

level of personal organisation

personal presentation

communication skills

number skills

ability to solve problems

manipulative skills

technical skills

Ratings would have to be made in terms of the demands posed by the job, so that the same level of (e.g.) number skills might be highly satisfactory for one type of job, but entirely unsatisfactory for another. The ratings judged in those terms might be:

1. more than satisfactory;
2. satisfactory;
3. less than satisfactory.

Comments might take account of factors such as the reasons why characteristics were judged more/less than satisfactory for the level of skill required for the job.

PROGRESSION This unit forms part of the National Certificate Skillstart 1 award. Successful completion of the award will facilitate the candidate's progress to National Certificate Skillstart 2 and to Scottish Vocational Qualifications (SVQs) and General Scottish Vocational Qualifications (GSVQs).

RECOGNITION Many SQA NC units are recognised for entry/recruitment purposes. For up-to-date information see the SQA guide 'Recognised Groupings of National Certificate Modules'.

REFERENCES

1. Guide to unit writing. (A018).
2. For a fuller discussion on assessment issues, please refer to SQA's Guide to Assessment. (B005).
3. Procedures for special needs statements are set out in SQA's guide 'Candidates with Special Needs'. (B006).
4. Information for centres on SQA's operating procedures is contained in SQA's Guide to Procedures. (F009).
5. For details of other SQA publications, please consult SQA's publications list. (X037).

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