

**-SQA-SCOTTISH QUALIFICATIONS AUTHORITY**

**HIGHER NATIONAL UNIT SPECIFICATION**

**GENERAL INFORMATION**

**Unit Number-**                    **D3R0 04**

**Unit Title-**                    Industrial Studies 1

**Superclass category-**            **EE**

**Date of publication-**  
**(month and year)**

**Originating centre for unit-** Cleveland Open Learning Unit

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**-DESCRIPTION-**

**GENERAL COMPETENCE FOR UNIT:**

Developing an understanding of aspects of Industrial Management

**OUTCOMES:**

1. describe the roles and relationships of engineering personnel in industry;
2. describe aspects of automation in industry and its effects on employment;
3. describe some of the main social, economic and political constraints on industry;
4. use a software package to plan a project.

**CREDIT VALUE:** 1 HN Credit

**ACCESS STATEMENT:** Access to this unit is at the discretion of the centre. It would, however, be beneficial if the student possessed competence in written and oral communication.

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**HIGHER NATIONAL UNIT SPECIFICATION**

**STATEMENT OF STANDARDS**

**Unit number:**

Additional copies of this unit can be obtained from:

The Administrative Services Unit, SQA, Hanover House, 24 Douglas Street,  
Glasgow G2 7NQ, (Tel: 0141-242 2166).

At the time of publication, the cost is £2.50 (minimum order £5.00).

**Unit title:** Industrial Studies 1

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 the standards are mandatory and cannot be altered without reference to SQA.

**OUTCOME****1. DESCRIBE THE ROLES AND RELATIONSHIPS OF ENGINEERING PERSONNEL IN INDUSTRY****PERFORMANCE CRITERIA**

- (a) The descriptions of the roles and relationships between Professional and Incorporated Engineers, Technicians, Craftsmen and Operatives are clearly stated.

**RANGE STATEMENT**

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

**EVIDENCE REQUIREMENTS**

Written evidence to satisfy the performance criterion

**OUTCOME****2. DESCRIBE ASPECTS OF AUTOMATION IN INDUSTRY AND ITS EFFECTS ON EMPLOYMENT****PERFORMANCE CRITERIA**

- (a) The explanation of the principle factors influencing the introduction of automation into British industry is accurate.
- (b) The description of the social and economic effects of the automation of industry is correct.
- (c) The explanation of a paradigm to solve problems of structural unemployment is correct in terms of its related social and economic effects and its underpinning definition of 'employment'.

**RANGE STATEMENT**

Principle factors: capital cost; reliability; quality; productivity; competition.

Social and economic effects: working patterns; skill requirements; employment; working conditions, over-production.

**EVIDENCE REQUIREMENTS**

PC (a) Written evidence identifying how the factors in the range have influenced the drive to automation of industry.

PC (b) Written evidence in the form of a short report to show how the automation of industry has affected the critical classes of the range category.

PC (c) Written evidence to show that the student can relate the level of structural unemployment to its definition and identify the possible consequences instrumental in a method for its alleviation.

**OUTCOME****3. DESCRIBE SOME OF THE MAIN SOCIAL, ECONOMIC AND POLITICAL CONSTRAINTS ON INDUSTRY****PERFORMANCE CRITERIA**

- (a) The description of the principal factors influencing the location of an industry is correctly related to the industry's requirements.
- (b) The explanation of how government intervention and policy in specific areas can affect industry is accurate.

**RANGE STATEMENT**

Principal factors: availability of fixed and financial capital; cost of land; raw materials; sources of power; labour requirements; markets; transport infrastructure.

Government intervention and policy: Government Economic Policy; monopolies; regional policies; consumer law; industrial training; safety legislation (Health and Safety At Work etc Act (HASAWA)); tariffs; quotas; corporation tax; value added tax; environmental controls.

**EVIDENCE REQUIREMENTS**

PC (a) Written evidence to show that the student can describe the principal factors influencing the siting of an industry.

PC (b) Written evidence to demonstrate the student understands how the given range of governmental policy and intervention acts to constrain the operational environment of industry.

**OUTCOME****4. USE A SOFTWARE PACKAGE TO PLAN A PROJECT.****PERFORMANCE CRITERIA**

- (a) The production of a precedence-link list is correct in terms of the given task list and task dependencies.
- (b) Entering of tasks and their duration into the project program is correct.
- (c) The assignment of resources and costs is correctly related to the tasks to be performed.
- (d) The production of an engineering project schedule is complete and correct in terms of Gantt/Bar Charts, PERT/Logic Diagram, Task and Resource usage graphs and accurate in terms of given data.

**RANGE STATEMENT**

The range for this outcome is fully expressed within the performance criterion

**EVIDENCE REQUIREMENTS**

The project may be real or a given 'paper exercise'.

Evidence in the form of reports (as hard copies and/or on disc) produced by the program to satisfy the performance criteria and to show that an engineering project has been planned using a software package.

**MERIT** To gain a pass in this unit, a candidate must meet the standards set out in the outcomes, performance criteria, range statements and evidence requirements.

To achieve a merit in this unit, a candidate must demonstrate a superior or more sophisticated level of performance. In this unit this might be shown in the following ways:

- (a) by the successful application of course knowledge gained, to an actual industrial situation.
- (b) by the demonstration of superior techniques in the execution of an engineering software scheduling project.
- (c) by the evidence of further reading and research.

**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 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**

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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## **HIGHER NATIONAL UNIT SPECIFICATION**

### **SUPPORT NOTES**

**Unit Number:**

**Unit Title:** Industrial Studies 1

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

**NATIONAL 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.

### **CONTENT/CONTEXT**

Outcome 4 could be satisfied if a student uses the software package in order to plan the course engineering project required for the group award.

### **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.

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