

-SQA- SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
24 Douglas Street
GLASGOW G2 7NQ**

NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number- 3161312 -Session- 1992-93
-Superclass- RA

-Title- SCIENCE AND TECHNOLOGY IN SOCIETY

-DESCRIPTION-

Purpose This module is designed to enable the candidate to develop basic research skills, information handling skills and the ability to appraise when investigating scientific and technological issues which affect society.

This module could be used within a programme of science or technology modules or may be used in its own right. The module may also be useful in the development of process and interpersonal skills.

Preferred Entry Level No formal entry requirements.

Outcomes The candidate should:

1. plan an investigation relating to scientific and technological issues in society;
2. analyse data appropriate to the aims of the investigation;
3. present a structured report supported by the evidence gathered in the investigation.

Assessment Procedures Acceptable performance in this module will be satisfactory achievement of all the Performance Criteria specified for each Outcome.

The following abbreviations are used below:

PC Performance Criteria
IA Instrument of Assessment

Note: The Outcomes and PCs are mandatory and cannot be altered. The IA may be altered by arrangement with SQA. (Where a range of performance is indicated, this should be regarded as an extension of the PCs and is therefore mandatory.)

OUTCOME 1 PLAN AN INVESTIGATION RELATING TO SCIENTIFIC AND TECHNOLOGICAL ISSUES IN SOCIETY

- PCs
- (a) The plan includes the aim, identification and statement of references for secondary sources.
 - (b) The scientific and technological information selected is relevant and accurate.

IA Personal Interview

A personal interview to assess the candidate's ability to plan an investigation relating to scientific and technological issues.

Personal interviews will be conducted by the tutor/trainer with individual candidates and may take place on an ongoing basis throughout the module. Primarily, the interviews should focus on covering both of the Performance Criteria for Outcome 1.

Satisfactory achievement of the Outcome will be demonstrated by the student achieving both Performance Criteria.

OUTCOME 2 ANALYSE DATA APPROPRIATE TO THE AIMS OF THE INVESTIGATION

- PCs
- (a) The interpretation of the scientific and technological information and its effect on the issue is relevant.
 - (b) The analysis of the data is valid in terms of the aims of the investigation.

OUTCOME 3 PRESENT A STRUCTURED REPORT SUPPORTED BY THE EVIDENCE GATHERED IN THE INVESTIGATION

- PCs
- (a) The identified scientific and technological facts are relevant to the issue.
 - (b) The interpretation of the implications of the identified facts for society within the issue is valid.
 - (c) The conclusion drawn or recommendations made are valid.
 - (d) The appraisal of the consensus of opinion regarding the identified facts and their implications is valid.

OUTCOMES 2 & 3 IA Project and Questionnaire

A project and a candidate devised questionnaire to assess the candidate's ability to undertake an investigation into a scientific and technological issue and appraise a presentation of this issue.

To cover the whole of Outcomes 2 and Performance Criteria (a) to (c) in Outcomes 3 the candidate will be required to undertake a project which will comprise an investigation into a scientific and technological issue. The investigation will include planning gathering and selecting appropriate information, analysing the information and producing a report of between 500 and 1000 words, that can be used as the basis of the presentation.

Within the report the candidate will consider key scientific and technological information and its implications for society, including a definite conclusion with regard to the issue, and include at least 2 pieces of information presented using one or more of the following forms:

- (i) an illustration in the form of a photograph, drawing or sketch
- (ii) a table of statistical data
- (iii) a graph or chart

To cover Performance Criterion (d) within Outcome 3 the candidate will be required to devise and complete a questionnaire to assess his/her ability to appraise a presentation of a scientific and technological issue.

The candidate should answer at least 3 questions relating to the facts within the presentation and 3 questions relating to the implications. These questions will be designed to assess the extent to which an identified fact may be considered as open to interpretation and hence how valid the implication may be considered to be. The responses may be given in an integrated way if all the valid information is covered.

Satisfactory achievement of Outcomes 2 and 3 will be demonstrated by the candidate covering every element within all the Performance Criteria.

**The following sections of the descriptor are offered as guidance.
They are not mandatory.**

CONTENT/CONTEXT

Corresponding to Outcomes 1-3:

In this module, investigative methods will be used to produce individual projects relating to the implications of science and technology in society and to critically appraise a scientific argument. The context of this module will be negotiated with the candidate.

It is important that the topic selected for study has appropriate and accessible resources available for the individual candidate.

Topics for study could include: global warming, the nuclear debate, the energy crisis, environmental issues, pollution, the consumer society, genetic engineering or any topical issue.

Various relevant publications could produce a variety of current and topical ideas.

In his/her investigation, the candidates will be planning, selecting and gathering information appropriate to the chosen topic and preparing a report with conclusion of his/her investigation, the specific content of which will be dictated by the negotiated logic.

SUGGESTED LEARNING AND TEACHING APPROACHES

This module is candidate-centred with candidates carrying out their own individual practical investigation. The candidate should select the topic he/she wishes to investigate in consultation with the tutor/trainer.

It is recommended that preparatory work be done by the candidates in groups, perhaps making and approving a presentation. For assessment purposes each candidate should complete an individual investigation.

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