

SQA Advanced Unit specification

General information

Unit title: Safety Engineering and the Environment (SCQF level 7)

Unit code: HT7P 47

Superclass: PL

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Version: 01

Unit purpose

This Unit is designed to enable learners to understand all relevant Health and Safety legislation and complete basic risk assessment on the equipment, environment and methods relating to the engineering sector.

Outcomes

On successful completion of the Unit the learner will be able to:

- 1 Explain the current Health and Safety legislation covering employers and employees.
- 2 Explain the handling, storage and disposal of dangerous substances.
- 3 Explain work equipment safety requirements.
- 4 Carry out a suitable risk assessment within a workplace environment.

Credit points and level

1 SQA Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7)

Recommended entry to the Unit

Learners should possess a general knowledge of workplace practice. This could be evidenced by possession of a suitable cluster of NC Units or relevant industrial experience.

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Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes for this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

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.

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.

SQA Advanced Unit specification: Statement of standards

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

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. Learners 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

Explain the current Health and Safety legislation covering employers and employees.

Knowledge and/or skills

- ◆ Health and Safety at Work Act
- ◆ Provision and use of work equipment regulations
- ◆ Management of Health and Safety at Work Act
- ◆ Personnel Protective Equipment regulations
- ◆ Confined space regulations
- ◆ Noise at work regulations

Outcome 2

Explain the handling, storage and disposal of dangerous substances.

Knowledge and/or skills

- ◆ Manual-handling regulations
- ◆ Control of substances hazardous to health regulations
- ◆ Chemical hazard identification and packaging regulations
- ◆ Environmental Protection Act

Outcome 3

Explain work equipment safety requirements.

Knowledge and/or skills

- ◆ Provision and use of work equipment regulations

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Outcome 4

Carry out a suitable risk assessment within a workplace environment.

Knowledge and/or skills

- ◆ Relevant health and safety legislation
- ◆ Risk assessment process
- ◆ Actions required following risk assessment

Evidence Requirements for this Unit

Assessment for all Outcomes should be conducted under supervised and controlled conditions.

Outcome 1

Written and/or oral recorded evidence for the knowledge and/or skills in this Outcome will be provided on a sample basis. The evidence may be provided in response to specific questions. Each learner will need to demonstrate that they can answer questions based on a sample of the knowledge and/or skills items in Outcome 1. In any assessment of this Outcome at least four of the six knowledge and/or skills items should be sampled.

A different sample question should be asked each time the Outcome is assessed. Learners must provide a satisfactory response to assessed questions.

Outcome 2

Written and/or oral recorded evidence for the knowledge and/or skills in this Outcome will be provided on a sample basis. The evidence may be provided in response to specific questions. Each learner will need to demonstrate that they can answer questions based on a sample of the knowledge and/or skills items in Outcome 2. In any assessment of this Outcome at least three of the four knowledge and/or skills items should be sampled.

A different sample question should be asked each time the Outcome is assessed. Learners must provide a satisfactory response to assessed questions.

Outcome 3

Learners will need to provide written and/or oral recorded evidence to demonstrate their knowledge and/or skills. The assessment should last 30 minutes.

Outcome 4

Outcome 4 will be assessed by the completion of an individual formal risk assessment that will be generated from notes taken during a previous group activity. Learners should be allowed to use these notes at the assessment event. The assessment event should last 30 minutes.

SQA Advanced Unit support notes

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Unit support notes are offered as guidance and are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

The content of this Unit is designed to allow the learner to work safely within an engineering environment. The Unit assessments should be structured such that the learner is building knowledge over each Outcome, to allow him/her to successfully complete a risk assessment on a given area, equipment or task.

Guidance on approaches to delivery of this Unit

Outcome 1: The learner will be tutored in the relevant Health and Safety legislation current at this time. The legislation covered should be an overview and not an in-depth study of each piece of legislation.

Outcome 2: The learner will be tutored in the relevant Manual Handling, Control of Substances Hazardous to Health, and Chemical Hazard Identification and Packaging legislation. The assessment could be combined with Outcome 1.

Outcome 3: The learner should be tutored in the Provision and Use of Work Equipment Regulations, and be assessed in identifying the relevant safety features of a given piece of equipment. The learner could submit a short report on their findings.

Outcome 4: The learner should prepare and carry out a risk assessment for a given area or piece of equipment. The risk assessment should be completed showing all hazards and control measures, to control as far as reasonably practicable the risk to health and safety of all concerned. The assessment should also highlight any areas not currently controlled by the control measures, and state suitable measures which may be taken to address these.

Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

The assessments for Outcomes 1 and 2 could be combined to form a question paper of 20 short answer and/or structured questions that should be answered in one hour.

The questions could be taken from a question bank of approximately 40 questions.

The questions chosen should cover all relevant legislation.

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Outcome 3 could be assessed by completion of a short report on the hazards associated with a specific piece of equipment. The assessment should last 30 minutes.

Assessment should be conducted under supervised and controlled conditions.

Learners could be guided on the relevant mechanical and non-mechanical hazards associated with a piece of equipment.

Learners could then show evidence in the form of an appropriate short report which highlights the mechanical and non-mechanical hazards associated with a specified piece of equipment. The report could outline all relevant control measures used to minimise risk associated with the equipment and include any recommendations related to any hazards identified but not controlled.

For Outcome 4 the learner group should be split into pairs and each pair instructed to carry out a separate risk assessment on a different piece of equipment or activity.

Each learner will require to show evidence of the five step risk assessment process and provide the associated documentation to support this. On completion of the risk assessment the learner should submit the completed documentation as evidence.

The use of a workshop with access to, for example, lathes, milling machine, guillotines, welding equipment or any other trade related equipment, will allow learners to show knowledge of an environment and equipment in which they are currently, or will in the future be, working with.

Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at www.sqa.org.uk/e-assessment.

Opportunities for developing Core and other essential skills

There may be opportunities to gather evidence towards the Core Skills of *Communication* and *Problem Solving* in this Unit.

History of changes

Version	Description of change	Date

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

FURTHER INFORMATION: Call SQA's Customer Contact Centre on 44 (0) 141 500 5030 or 0345 279 1000. Alternatively, complete our Centre Feedback Form.

General information for learners

Unit title: Safety Engineering and the Environment (SCQF level 7)

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

The completion of this Unit will allow you to demonstrate a minimum level of competence to employers in your understanding of general Health and Safety legislation.

You will also benefit from the knowledge and understanding gained in this Unit, allowing you to work safely within an engineering environment.

The teaching and learning of this Unit should allow you to understand current legislation in the field of health and safety and your roles and responsibilities within the workplace.

Current legislation covered in this Unit:

- ◆ Health and Safety at Work Act
- ◆ Provision and use of work equipment regulations
- ◆ Management of Health and Safety at Work Act
- ◆ Personnel Protective Equipment regulations
- ◆ Confined space regulations
- ◆ Noise at work regulations
- ◆ Manual-handling regulations
- ◆ Control of substances hazardous to health
- ◆ Environmental Protection Act
- ◆ Chemical Hazard Identification and Packaging

The assessment for the Unit is as follows:

Evidence for all Outcomes in this Unit will be conducted under supervised and controlled conditions. To complete the Unit successfully you will have to achieve a satisfactory level of performance in the assessment event/s.