



National Unit Specification: general information

UNIT Maintenance Safety (SCQF level 6)

CODE F5JA 12

SUMMARY

This Unit may form part of a National Qualification Group Award or may be offered on a free standing basis.

This Unit is designed to provide candidates with knowledge and understanding of health and safety in an engineering maintenance environment. During Unit delivery candidates will learn about the responsibilities of employers and employees in relation to current health and safety legislation that applies in a mechanical plant maintenance environment. Candidates will also examine the role of different company personnel in health and safety. They will also learn to explain working practices, procedures and training requirements as applied to engineering plant maintenance. Candidates will also develop the knowledge and understanding to explain procedures used to minimise the dangers which may be encountered in an engineering plant maintenance working environment.

This Unit is suitable for candidates training to be mechanical, maintenance or multi-disciplinary engineering technicians.

OUTCOMES

- 1 Describe employer and employee responsibilities for health and safety in an engineering plant maintenance environment.
- 2 Explain safe working practices, procedures and training requirements as applied to engineering plant maintenance working environments.
- 3 Explain the procedures used to minimise the dangers which may be encountered in an engineering plant maintenance working environment.

Administrative Information

Superclass: VG

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National Unit Specification: general information (cont)

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RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates would normally be expected to have attained the following or equivalent.

- ◆ NQ Unit *Maintenance Safety* (SCQF level 5)
- ◆ appropriate industrial experience in the field of mechanical plant maintenance

CREDIT VALUE

1 credit at SCQF level 6 (6 SCQF credit points at SCQF level 6).

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

CORE SKILLS

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

The Unit provides opportunities for candidates to develop aspects of the following Core Skills:

- ◆ Communication (SCQF level 6)
- ◆ Information Technology (SCQF level 6)
- ◆ Working with Others (SCQF level 5)

These opportunities are highlighted in the Support Notes of this Unit Specification.

National 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.

OUTCOME 1

Describe employer and employee responsibilities for health and safety in an engineering plant maintenance environment.

Performance Criteria

- (a) State correctly employer's responsibilities in terms of current health and safety legislation.
- (b) State correctly employee's responsibilities in terms of current health and safety legislation.
- (c) Identify correctly sources of current information for guidance on legislative provisions and regulations.
- (d) Describe correctly the roles and responsibilities of company personnel in relation to health and safety issues.

OUTCOME 2

Explain safe working practices, procedures and training requirements as applied to engineering plant maintenance working environments.

Performance Criteria

- (a) Identify correctly examples of health and safety signage that are commonly used in plant environments and state their correct location and use.
- (b) Describe correctly the Personal Protective Equipment (PPE) requirements for given plant maintenance tasks.
- (c) State correctly examples of the safe use and storage of tools and equipment in accordance with recognised regulations, testing and calibration procedures and company storage procedures.
- (d) State correctly the testing and certification requirements to ensure safe operation of maintenance specific equipment.
- (e) Explain correctly the need for identification, handling, storage and disposal of dangerous substances used in plant maintenance environments.
- (f) Explain correctly the training needs of company and external personnel in on-site health and safety issues.

National Unit Specification: statement of standards (cont)

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OUTCOME 3

Explain the procedures used to minimise the dangers which may be encountered in an engineering plant maintenance working environment.

Performance Criteria

- (a) Describe correctly how a Risk Assessment procedure should be carried out in an engineering plant maintenance environment.
- (b) Explain correctly the purpose of a Method Statement with regard to plant maintenance activities.
- (c) Explain correctly the importance of common safe systems of work between different engineering departments within a company and on-site contractors.
- (d) Explain correctly how a Permit to Work system should operate in an engineering plant maintenance environment.
- (e) Identify correctly the subject matter which should be discussed in an on-site Maintenance Team Meeting prior to commencing maintenance activities.

EVIDENCE REQUIREMENTS FOR THIS UNIT

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

Written and/or recorded oral evidence should be produced to demonstrate that a candidate has achieved all Outcomes and Performance Criteria.

Outcomes 1, 2 and 3 may be assessed on an individual basis, as a combination of Outcomes (eg Outcomes 1 and 2 assessed together and Outcome 3 on its own), or as a single assessment covering all three Outcomes. The total time for assessment(s) should not exceed 2 hours and 30 minutes. Assessment(s) must be conducted under controlled, supervised, closed-book conditions in which candidates may use reference materials provided by the centre but are not allowed to bring their own notes, handouts, textbooks or other materials into the assessment.

With regard to Outcome 1

- ◆ candidates must state five employer and five employee responsibilities with regard to current health and safety legislative requirements
- ◆ candidates must state three current sources of information for guidance on legislative provisions and regulations
- ◆ candidates must describe the roles and responsibilities of two different company personnel in relation to health and safety issues

National Unit Specification: statement of standards (cont)

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With regard to Outcome 2

- ◆ candidates must identify six different health and safety signs commonly found in plant environments and state the location and use of three of these signs
- ◆ candidates must describe PPE requirements for three different maintenance tasks
- ◆ candidates must state four examples of the safe use and storage of tools and equipment in accordance with recognised regulations, testing and calibration procedures and company storage procedures
- ◆ candidates must state the testing and certification requirements associated with two items of maintenance equipment
- ◆ candidates must explain three training needs of company and external personnel in on-site health and safety issues

With regard to Outcome 3

- ◆ candidates must identify four items which should be discussed in an on-site Maintenance Team Meeting prior to commencing maintenance activities

The Assessment Support Pack for this Unit provides sample assessment material. Centres wishing to develop their own assessments should refer to the Assessment Support Pack to ensure a comparable standard.

National Unit Specification: support notes

UNIT Maintenance Safety (SCQF level 6)

This part of the Unit Specification is offered as guidance. The support notes 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

This Unit forms part of the National Qualification Group Award in Mechanical Engineering at SCQF level 6, but may also be offered on a free standing basis.

The aim of this Unit is to provide candidates with knowledge and understanding of health and safety in an engineering maintenance environment. On successful completion of the Unit candidates will be able to state some of the responsibilities of employers and employees in relation to current health and safety legislation as applied in a mechanical plant maintenance environment. Candidates will also be able to describe the role of different company personnel in health and safety. They will also have learnt to explain working practices, procedures and training requirements as applied to engineering plant maintenance environments. Candidates will also have developed the knowledge and understanding to explain procedures used to minimise the dangers which may arise in engineering plant maintenance working environments.

In Outcome 1 candidates should explore the responsibilities of employers and employees with regard to current health and safety legislation as these apply in an engineering plant maintenance environment. They should also learn how to access current information for guidance on legislative provisions and regulations as applied to plant maintenance procedures. Such sources of information may include Health and Safety Executive (HSE) information, company health and safety representatives (eg Health and Safety Officer), trade union representatives, company Health and Safety policies, procedures and practices etc. Candidates should explore the roles and responsibilities of different company personnel with regard to health and safety. Such personnel may include employees, supervisors, managers, company health and safety officer and trade union representatives.

In Outcome 2 candidates should examine safe working practices, procedures and training requirements applied in engineering plant maintenance. Candidates should learn to identify health and safety signs used in plant maintenance environments and state their location and use. They should examine the requirements for different types of PPE in different plant maintenance environments (eg breathing equipment in certain gaseous environments). Candidates should also consider the safe use and storage of tools and equipment in line with recognised regulations, testing and calibration procedures and company storage procedures and the testing and certification requirements associated with maintenance equipment such as scissor lifts, cherry pickers, fork lift trucks etc. Candidates should also learn about the need for identification, handling, storage and disposal of dangerous substances used in plant maintenance environments. They should also examine the training needs of company and external personnel with regard to on-site health and safety issues (eg the correct use of safety equipment, safety legislation, manual handling and lifting techniques etc.)

National Unit Specification: support notes (cont)

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In Outcome 3 candidates should look at procedures and practices used to minimise the dangers which may be encountered in engineering plant maintenance working environments. Centres may start delivery of Outcome materials by examining how Risk Assessments should be carried out in an engineering plant maintenance environment. Candidates should learn about the purpose of Method Statements in planning plant maintenance activities and safety. They should also explore the importance of common safe systems of work between different engineering departments within a company and on-site contractors including approved contractor systems. Candidates should learn how a Permit to Work system should be operated in engineering plant maintenance. They should also explore the subject matter which should be discussed in an on-site Maintenance Team Meeting prior to commencing maintenance activities such as isolation procedures, Permit to Work, Working at Height, Working in Confined Spaces, compressed gases, pressure vessels etc.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

It is recommended that the Unit is delivered in the same sequence the Outcomes are presented in the National Unit Specification: statement of standards section of the Unit. The Unit may be delivered by a combination of lectures, group work, role play, case studies, investigations (including the use of the Internet) and industrial visits.

Unit delivery could specifically include group discussions and role play based on workplace health and safety issues and events. Such an approach could be particularly beneficial for candidates with little or no industrial experience.

Role play of typical industry scenarios could enhance the co-operative working skills of candidates as they are encouraged to:

- ◆ analyse the tasks and identify the elements involved
- ◆ negotiate the nature and scope of goals, roles and responsibilities taking account of strengths and weaknesses of individual members of the maintenance team
- ◆ support co-operative working
- ◆ contribute to the review and evaluation of team and individual performance

Case study materials highlighting ‘real life’ industrial situations are particularly recommended for learning and teaching. Case studies could be used to stimulate discussion on a range of health and safety issues including the responsibilities of employers and employees for health and safety, the selection of PPE for different maintenance environments, the health and safety training needs of different personnel in a company etc.

Candidates may investigate and evaluate relevant legislation, policies and procedures from available resources including websites. Engineering industries where maintenance safety and up-dating of current legislation is an issue will often have their own information websites, (usually trade associations, societies, institutes and trades unions). These may be accessed by lecturers and candidates according to the particular industry in which candidates are involved.

National Unit Specification: support notes (cont)

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Industrial visits, particularly for candidates with little or no industrial experience, can often be of great benefit in allowing them to see how health and safety procedures and practices are applied in practice. Discussions with plant staff will also give candidates opportunities to explore in a practical context some of the health and safety issues they have discussed in the classroom.

Guest lecturers from different industries can provide candidates with, among other things, enhanced knowledge and understanding of health and safety legislation, practices and procedures, employer and employee responsibilities with regard to health and safety, good and bad health and safety practices etc.

Wall charts, videos/DVDs and other learning and teaching aids dealing with health and safety issues can also help to enhance candidate learning.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

The Reading Communication Core Skill component at SCQF level 6 may be developed while candidates are sourcing and reading information from a range of sources. The use of library and internet resources should be actively encouraged and time made available accordingly. Skills in assessing the validity of information from different sources should be encouraged. Evaluation of information accessed should include a check of the accuracy and currency of all information to be used.

The Oral Communication Core Skill component at SCQF level 6 may be developed while candidates engage in group discussions and role play on industrially related health and safety issues.

The Written Communication Core Skill at SCQF level 6 may be developed while candidates are providing answers to questions in both formative and summative assessments.

The Using Information Technology Core Skill component at SCQF level 6 may be developed while candidates explore various websites containing information on health and safety issues.

The Working with Others Core Skill component at SCQF level 5 may be developed while candidates communicate and listen to others in group discussions and role play situations.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Centres are encouraged to use formative assessment extensively as it plays a particularly important role in allowing candidates to develop a sound knowledge and understanding of issues relating to health and safety.

Outcomes 1 and 2

Assessment may comprise a single assessment paper covering the Outcome and Performance Criteria requirements for both Outcomes. The assessment paper should be taken at a single assessment event lasting 1 hour and 30 minutes and comprise a suitable balance of short answer, restricted response and structured questions.

National Unit Specification: support notes (cont)

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Outcome 3

Assessment may comprise a single assessment paper covering the Outcome and Performance Criteria requirements of the Outcome. The assessment paper should be taken at a single assessment event lasting 1 hour and comprise a suitable balance of short answer and restricted response questions.

Opportunities for the use of 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 e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

DISABLED CANDIDATES AND/OR THOSE WITH ADDITIONAL SUPPORT NEEDS

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements