

Higher National Unit Specification

General information for centres

Unit title: Plan an Environmental Management System

Unit code: DV0N 35

Unit purpose: The Unit is a specialised Unit designed as part of the HND in Environmental Sciences award. Candidates will develop knowledge of the general requirements of environmental management systems and then apply this knowledge to an organisation. On completion of the Unit the candidate should be able to:

- 1 Describe the requirements for environmental management systems.
- 2 Research and design an environmental policy statement based on an environmental management system.
- 3 Plan an environmental management system to meet the environmental needs of an organisation.
- 4 Prepare an Environmental Management Review.

Credit points and level: 2 HN Credit at SCQF level 8: (16 SCQF credit points at SCQF level 8*)

**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.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. However, it would be beneficial if students had some understanding in any of the following areas: environmental law; environmental science; technology; economics; management. This can be evidenced by the following Units: those Units comprising Managing Environmental Resources (H & AH); Sustainable Development (DN38 34); Quality Health and Safety Systems in the Science Industries (DF82 34).

Core Skills: There are opportunities to develop the Core Skill(s) of Communication, IT and Working with Others at Higher level in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

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.

Assessment: The Unit is assessed by a single holistic assessment. Assessment can reflect the approach taken by an individual centre. All Outcomes should be assessed by a single holistic assessment in the form of a case study based on the environmental management of an organisation.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, knowledge and/or skills, and Evidence Requirements are mandatory.

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. Candidates 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

Describe the requirements for environmental management systems

Knowledge and/or skills

- ◆ Environmental management systems: ISO14001; Eco-management and Audit Scheme (EMAS)

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and skills by showing that they can describe the components of Environmental management systems: ISO14001 or EMAS.

Outcome 2

Research and design an environmental policy statement based on an environmental management system

Knowledge and/or skills

- ◆ Policy requirements of environmental management standards: ISO14001, Eco-Management and Audit Scheme (EMAS)
- ◆ Needs of an organisation: economic; environmental
- ◆ Environmental legislation: legislation; regulations; codes of practice
- ◆ Environmental aspects of an organisation

Evidence Requirements

- (a) The policy statement is relevant to the nature, scale and environmental impacts of the organisation's activities, products or services and contains information on the economic and environmental needs of an organisation.
- (b) The policy statement fulfils the specific requirements of an Environmental Management Standard (ISO14001 or EMAS).
- (c) The policy statement includes a commitment to comply with all relevant environmental legislation and regulations, and with other requirements to which the organisation complies.
- (d) The policy statement is produced in a style which is accessible to all employees of the organisation and members of the general public.

Higher National Unit specification: statement of standards (cont)

Unit title: Plan an Environmental Management System

Outcome 3

Plan an environmental management system to meet the environmental needs of an organisation

Knowledge and/or skills

- ◆ Planning requirements of environmental management standards: ISO14001; Eco-Management and Audit Scheme (EMAS)
- ◆ Legal requirements
- ◆ Environmental aspects of an organisation: waste management; energy management; sustainable resource use; transport; control of pollution
- ◆ Types of environmental aspects: direct; indirect; controlled; uncontrolled

Evidence Requirements

- (a) The environmental management system must be consistent with the chosen standard (EMAS or ISO14001).
- (b) The environmental aspects should be identified correctly in relation to the organisation's activities, products or services.
- (c) The legal and other requirements should be identified in relation to the organisation's activities.
- (d) The objectives and targets should be consistent with the organisation's environmental aspects, legal and other requirements and the environmental policy.
- (e) The environmental management programme must be adequate to achieve the organisation's environmental objectives and targets.

Assessment guidelines

The Environmental Management System (Manual, Procedures, Objectives and Targets, Environmental Programme and Work Instructions) should form an integral part of the single integrative assessment covering Outcomes 1, 2, 3 and 4

Outcome 4

Prepare an Environmental Management Review

Knowledge and/or skills

- ◆ Review requirements of environmental management standards: ISO14001; Eco-Management and Audit Scheme (EMAS)

Evidence Requirements

The review should be based on an in-depth investigation of the organisation's environmental performance. It should clearly identify strengths, weaknesses, opportunities and threats and make clear recommendations for improvement where appropriate.

Higher National Unit specification: statement of standards (cont)

Unit title: Plan an Environmental Management System

Assessment guidelines

The Environmental Management System (Manual, Procedures, Objectives and Targets, Environmental Programme and Work Instructions) should form an integral part of the single integrative assessment covering Outcomes 1, 2, 3 and 4

ASSESSMENT GUIDELINES FOR THE UNIT

The Policy Statement should form an integral part of the single integrative assessment covering all Outcomes. The assessment instrument should take the form of a case study based on the environmental performance of an organisation. The selected organisation could be already accredited to an environmental management system (ISO14001 or EMAS), working towards accreditation or not accredited with no intention of becoming so. In any event the general approach should be that the candidate investigates the environmental performance of an organisation and then uses the information generated to: write an environmental policy statement (200 words); produce an environmental management manual, procedures, objectives and targets, management programme and work instructions appropriate to the organisation and fulfilling the requirements of a given environmental management system (4,000 words); prepare an environmental management review (2000 words). Obviously the nature of the review will depend on whether ISO 14001 or EMAS has been selected and whether the organisation is already accredited or not. In other words it might take the form of a Preparatory Environmental Review in the case of a non-accredited organisation or it might form a regular Management Review of an existing accredited system. The assessment should be carried out under open-book (no restrictions) conditions and can be either work based or college based. In the latter case it would be appropriate to study the environmental performance of the delivering centre whether accredited or not. This could be a simulation if appropriate.

If the scope (products, services, premises) of the organisation selected for the case study is very large it will not be possible to complete Outcome 3 within the suggested word count. For example, the system could be depicted schematically in a diagram and then key elements fleshed out to form exemplars covering the knowledge and skills. Alternatively Outcome 3 could be tackled as a team effort with individual class members working together to produce an environmental management manual and then allocating specific tasks to each class member with regard to procedures, legal requirements, environmental aspects, objectives and targets, management programme. A single report could then be produced with individual candidates contributions clearly identified.

Administrative Information

Unit code:	DV0N 35
Unit title:	Plan an Environmental Management System
Superclass category:	QA
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Higher National Unit specification: support notes

Unit title: Plan an Environmental Management System

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 80 hours.

Guidance on the content and context for this Unit

This unit has been designed for both trainee and practising environmental managers and for general managers with environmental responsibilities. It can be used within a wide variety of vocational programmes in management and business administration.

The unit is particularly suitable for candidates undertaking a programme in environmental science or environmental management. It would also be of great value, as a stand alone unit, for general managers in employment charged with planning an environmental management system in their workplace.

The candidate will achieve the level of competence required to plan and review an environmental management system in compliance with recognised British and European environmental management standards (ISO14001 and EMAS).

The candidate will therefore be able to use the recognised Standards and apply them within an organisation in order to: identify environmental impacts; list the legal and other policy requirements; set environmental objectives and targets consistent with the nature of the environmental effects and the business requirements of the organisation; plan the implementation of a programme of management and control; carry out a programme of audit and review; and plan human resource programmes to facilitate implementation.

The purpose of the unit requires that teaching and learning should be firmly placed in the context both of an organisation and of the British and European environmental Standards. The organisation context may be provided by a real organisation of which the student has gained sufficient knowledge either through employment, short placements or visits. Alternatively the organisation context can be provided by the College / training establishment at which the unit is being delivered.

The Environmental Management Standards context should be provided by direct examination of the texts of the published British and European Standards. In September 2005, these are:

- ◆ Implementation of ISO14001 : 2004, Environmental Management Systems — Specification with guidance for use
- ◆ EC Eco-Management and Audit Scheme (EMAS)

Candidates undertaking this unit as a stand alone unit while employed as managers with environmental responsibilities may find considerable scope for accreditation of prior learning. These opportunities should be explored by tutors and candidates. In this case the unit could be approached as a vocational unit with the notional design length being divided into 10 hours study/in-college and 70 hours project based.

Higher National Unit specification: support notes (cont)

Unit title: Plan an Environmental Management System

Centres delivering this unit as part of a programme in environmental science or environmental management will find considerable opportunities for integration of teaching/learning and assessment with other core units within the programme.

Guidance on the delivery and assessment of this Unit

An extended case study in which the candidate assumes the role of an environmental manager and in which assignments are arranged to coincide with the planned implementation of an environmental management system. The organisation must be real but the situation can be either real, that is in the process of implementing an EMS, or simulated ie the organisation has no intention of implementing the EMS. In any event useful information will be generated to meet the environmental needs of the organisation.

It is essential that candidates relate the Outcomes of this unit to the needs of a real organisation of which the candidate has gained sufficient knowledge either through employment, work placements or extended visits. Alternatively the candidate could use the centre delivering the unit for the basis of an extended study project

1 Describe the general requirements for environmental management systems.

This Outcome should provide candidates with the opportunity to prepare themselves for the remainder of the unit.

2 Use an environmental management system to draw up an environmental policy statement which meets the economic and environmental needs of an organisation.

The policy requirements of environmental management systems: The policy statement is based on the environmental aspects and legal obligations of the organisation; Requirement for plain English.

3 Plan an environmental management system to meet the environmental needs of an organisation.

Plan the environmental management system within the commercial context of the organisation. Compile registers of environmental aspects and environmental legislation to keep up with the changing environmental agenda. Environmental aspects might include the following:

Scale of environmental aspect: global; national; local.

Direct and indirect environmental aspects.

Nature of environmental aspect: emissions to air; discharges to water; production of wastes; contamination of land; use of energy and non-sustainable resources; generation of noise.

Environmental aspects under different operating conditions: normal; abnormal; incidents and emergencies.

Environmental aspects over different time scales: past activities; current activities; planned activities.

Higher National Unit specification: support notes (cont)

Unit title: Plan an Environmental Management System

Environmental legislation pertaining to the activities of the organisation: EC Directives; Acts of Parliament; Regulations; Codes of Practice.

Environmental objectives and targets which meet the commercial and environmental needs of an organisation: management objectives; improvement objectives.

Devise an environmental management programme within the commercial context of the organisation. Devise plans for working with providers of environmental services. Analyse the nature of problems from business and environmental angles to develop cost effective solutions which meet business and environmental objectives. Plan the implementation of control and verification procedures to deal with functions, activities and processes. Design and document procedures for performance measurement: investigation of non-compliance; taking corrective action; preventing recurrence; mitigating adverse aspects.

If the scope (products, services, premises) of the organisation selected for the case study is very large it will not be possible to complete Outcome 3 within the suggested word count (4000 words). If this is the case sampling should be employed. For example, the system could be depicted schematically in a diagram and then key elements fleshed out to form exemplars covering the knowledge and skills. Alternatively Outcome 3 could be tackled as a team effort with individual class members working together to produce an environmental management manual and then allocating specific tasks to each class member with regard to procedures, legal requirements, environmental aspects, objectives and targets, management programme. A single report could then be produced with individual candidates contributions clearly identified.

4 Prepare an Environmental Management Review.

Review: the channels of communication throughout the organisation; Define roles and responsibilities; Communicate environmental policy to all personnel; Raise levels of awareness and motivation of personnel to develop a positive environmental culture; Identify training needs of individuals and participate in the development of a training programme;. Develop measures to ensure individuals understand their responsibilities and are accountable for both environmental damage and improvement; Definition of roles in accident and emergency situations; Testing of accident and emergency procedures.

Review monitoring, recording and audit procedures to demonstrate compliance with environmental policy and the achievement of environmental objectives and targets. Carry out routine internal monitoring, verification and audit procedures. Produce a report of internal monitoring, verification and audit activities. Evaluate the advantages and disadvantages of internal audits as opposed to external audits by independent outsiders.

Opportunities for developing Core Skills

There are opportunities to develop the Core Skill(s) of Communication, IT and Working with Others at Higher level in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Higher National Unit specification: support notes (cont)

Unit title: Plan an Environmental Management System

Open learning

The Unit is suitable for a range of delivery modes, full time, part time, block or day release or distance learning. Also work based delivery would be appropriate. Where candidates are not attending the delivery centre it is essential that they have access to an organisation on which to base a reasonable case study for assessment purposes. Steps should be taken by the delivering centre to ensure that assessments are the candidates own work.

Candidates with additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative Outcomes for Units. For information on these, please refer to the SQA document *Guidance on Alternative Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on SQA's website: www.sqa.org.uk.

General information for candidates

Unit title: Plan an Environmental Management System

The unit is a specialised Unit designed as part of the HND in Environmental Sciences award although it may be delivered as a stand alone unit or as part of other HNC/D awards eg Environmental Management. While doing the unit you will develop knowledge of the general requirements of environmental management systems and then apply this knowledge to an organisation. On completion of the unit you should be to:

- 1 Describe the general requirements for environmental management systems (ISO 14001 and EMAS).
- 2 Use an environmental management system (ISO 14001 or EMAS) to draw up an environmental policy statement which meets the economic and environmental needs of an organisation.
- 3 Plan an environmental management system (ISO 14001 or EMAS) to meet the environmental needs of an organisation.
- 4 Prepare an Environmental Management Review (ISO 14001 or EMAS).

You will achieve this through approximately 10 hours of classroom study followed up with an extended case study on the environmental performance of an organisation — either your College or University or an organisation to which you have access. The case study / investigation will take at least 70 further hours and you may need to study over and above this.