



Higher National Unit specification

General information for centres

Unit title: Health and Safety: Occupational Health Risks

Unit code: F0NF 35

Unit purpose: This Unit is designed to enable the candidate to develop knowledge and understanding of the importance of occupational health in the workplace and the established frameworks for maintenance of best practice.

On completion of the Unit the candidate should be able to

- 1 Describe and demonstrate understanding of the basic principles of human physiology, occupational health and hygiene, toxicology and epidemiology.
- 2 Describe and demonstrate understanding of the nature of hazardous substances in the workplace and the management of associated risks.
- 3 Describe and demonstrate understanding of the nature of hazardous biological agents in the workplace and the management of associated risks.
- 4 Describe and demonstrate understanding of the nature of hazardous physical agents in the workplace and the management of associated risks.
- 5 Describe and demonstrate understanding of the nature of psycho-social factors in the workplace and the management of associated risks.
- 6 Describe and demonstrate understanding of the nature of ergonomic factors in the workplace and the management of associated risks.

Credit points and level: 2 HN credits 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: Candidates should have the knowledge, skills and/or experience equivalent to SVQ level 3 in occupational health and safety practice. A minimum level of Core Skills at SCQF level 5 or equivalent is essential in Communication and Numeracy.

Core Skills: There is no automatic certification of Core Skills in this Unit. However, there may be opportunities to develop aspects of the Core Skills in *Communication* and *Problems Solving*.

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.

General information for centres (cont)

Assessment: Two instruments of assessment are recommended for this Unit. Restricted response questions could be used to assess Outcomes 1. This would be conducted under examination conditions.

Outcomes 2, 3, 4, 5 and 6 could be assessed by written assignments having a restricted word count to be completed by the student under open-book, unsupervised conditions and to meet set deadlines.

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 and demonstrate understanding of the basic principles of human physiology, occupational health and hygiene, toxicology and epidemiology

Knowledge and/or Skills

- ◆ Basic physiology
- ◆ Nature and history of occupational health and hygiene
- ◆ Role and function of occupational health specialists
- ◆ Role of Occupational Health Service
- ◆ Categories of occupational health hazard
- ◆ Principles of toxicological investigation
- ◆ Use of epidemiological techniques in the workplace

Evidence Requirements

To achieve the Outcome, the candidate should produce evidence in an appropriate medium to demonstrate all aspects of the Knowledge and/or Skills section. The candidate should produce accurate responses demonstrating knowledge and understanding of the basic principles of human physiology, occupational health and hygiene, toxicology and epidemiology, and of the application of these principles in the workplace.

Assessment Guidelines

The candidate could be assessed by means of one restricted response paper to be produced under open-book examination conditions. The candidate would be allowed access to the course textbook and personal notes.

Higher National Unit specification: statement of standards (cont)

Unit title: Health and Safety: Occupational Health Risks

Outcome 2

Describe and demonstrate understanding of the nature of hazardous substances in the workplace and the management of associated risks

Knowledge and/or Skills

- ◆ Classification of hazardous substances
- ◆ Risk factors
- ◆ Hygiene standards
- ◆ Control measures and strategies
- ◆ Monitoring and maintenance of control measures
- ◆ Relevant statutory provisions

Evidence Requirements

To achieve the Outcome, the candidate should produce evidence in an appropriate medium to demonstrate all aspects of the Knowledge and/or Skills section. The candidate should produce accurate responses demonstrating how to apply knowledge and understanding to the management of hazardous substances in the workplace.

Assessment Guidelines

The candidate could be assessed by means of a work-based project to meet the Evidence Requirements using a selected hazardous substance in a workplace context. Evidence could be presented in the form of a 1,500 word assignment. The candidate should be provided in advance with an assignment brief detailing the requirements and giving guidelines on structure and content.

Outcome 3

Describe and demonstrate understanding of the nature of hazardous biological agents in the workplace and the management of associated risks

Knowledge and/or Skills

- ◆ Classification of biological agents
- ◆ Risk factors
- ◆ Control measures and strategies
- ◆ Monitoring
- ◆ Relevant statutory provisions

Evidence Requirements

To achieve the Outcome, the candidate should produce evidence in an appropriate medium to demonstrate all aspects of the Knowledge and/or Skills section. The candidate should produce accurate responses demonstrating how to apply knowledge and understanding to the management of hazardous biological agents in the workplace.

Higher National Unit specification: statement of standards (cont)

Unit title: Health and Safety: Occupational Health Risks

Assessment Guidelines

The candidate could be assessed by means of a work-based project to meet the Evidence Requirements using a selected hazardous biological agent in a workplace context. Evidence could be presented in the form of a 1,500 word assignment. The candidate should be provided in advance with an assignment brief detailing the requirements and giving guidelines on structure and content.

Outcome 4

Describe and demonstrate understanding of the nature of hazardous physical agents in the workplace and the management of associated risks

Knowledge and/or Skills

- ◆ Characteristics of physical agents
- ◆ Risk factors
- ◆ Control measures and strategies
- ◆ Monitoring
- ◆ Relevant statutory provisions

Evidence Requirements

To achieve the Outcome, the candidate should produce evidence in an appropriate medium to demonstrate all aspects of the Knowledge and/or Skills section. The candidate should produce accurate responses demonstrating how to apply the knowledge and understanding to the management of hazardous physical agents in the workplace.

Assessment Guidelines

The candidate could be assessed by means of a work-based project to meet the Evidence Requirements using a selected hazardous physical agent in a workplace context. Evidence could be presented in the form of a 1,500 word assignment. The candidate should be provided in advance with an assignment brief detailing the requirements and giving guidelines on structure and content.

Outcome 5

Describe and demonstrate understanding of the nature of psycho-social factors in the workplace and the management of associated risks

Knowledge and/or Skills

- ◆ Characteristics of psycho-social conditions
- ◆ Risk factors
- ◆ Control measures and strategies
- ◆ Monitoring
- ◆ Relevant statutory provisions

Higher National Unit specification: statement of standards (cont)

Unit title: Health and Safety: Occupational Health Risks

Evidence Requirements

To achieve the Outcome, the candidate should produce evidence in an appropriate medium to demonstrate all aspects of the Knowledge and/or Skills section. The candidate should produce accurate responses demonstrating how to apply the knowledge and understanding to the management of harmful psycho-social agents in the workplace.

Assessment Guidelines

The candidate could be assessed by means of a work-based project to meet the Evidence Requirements using a selected hazardous psycho-social condition in a workplace context. Evidence could be presented in the form of a 1,500 word assignment. The candidate should be provided in advance with an assignment brief detailing the requirements and giving guidelines on structure and content.

Outcome 6

Describe and demonstrate understanding of the nature of ergonomic factors in the workplace and the management of associated risks

Knowledge and/or skills

- ◆ Characteristics of ergonomic conditions
- ◆ Risk factors
- ◆ Control measures and strategies
- ◆ Monitoring
- ◆ Relevant statutory provisions

Evidence Requirements

To achieve the Outcome, the candidate should produce evidence in an appropriate medium to demonstrate all aspects of the Knowledge and/or Skills section. The candidate should produce accurate responses demonstrating how to apply the knowledge and understanding to the management of ergonomic factors in the workplace.

Assessment guidelines

The candidate could be assessed by means of a work-based project to meet the Evidence Requirements using a selected hazardous ergonomic condition in a workplace context. Evidence could be presented in the form of a 1,500 word assignment. The candidate should be provided in advance with an assignment brief detailing the requirements and giving guidelines on structure and content.

Administrative Information

Unit code: F0NF 35

Unit title: Health and Safety: Occupational Health Risks

Superclass category: PL

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History of Changes:

| Version | Description of change | Date |
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Higher National Unit specification: support notes

Unit title: Health and Safety: Occupational Health Risks

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

The Unit forms part of the Professional Development Award in Occupational Health and Safety Practice, and may be delivered as part of this or similar SCQF level 8 Group Award. It is designed to meet ENTO occupational standards at level 4, and is a likely qualification route for full-time professional occupational safety and health professionals aspiring to Membership of professional institutions.

This Unit is designed to provide candidates with the knowledge and understanding of occupational health risks and associated control/monitoring measures and strategies.

The following areas should be covered:

Outcome 1

Describe and demonstrate understanding of the basic principles of human physiology, occupational health and hygiene, toxicology and epidemiology

Basic physiology:

- ◆ Anatomical systems: respiratory, digestive, circulatory, nervous
- ◆ Sensory systems: skin, eyes, ears, nose
- ◆ Routes of entry and mechanisms of attack
- ◆ Defence mechanisms

Nature and history of occupational health and hygiene:

- ◆ Purposes and nature of the discipline
- ◆ Stages of occupational health and hygiene practice: identification, measurement, evaluation, control

Role and function of occupational health specialists:

- ◆ Occupational hygienist, occupational health physician, occupational health nurse, Employment Medical Advisory Service (EMAS)
- ◆ Occupational health service: health promotion, pre-employment medical screening, medical/health surveillance, fitness for work assessment, counselling

Categories of occupational health hazard:

- ◆ Chemical, physical, biological, psycho-social, ergonomic

Principles of toxicological investigation:

- ◆ Legal requirements for testing of new substances
- ◆ Types of toxicity tests and their limitations
- ◆ Significance of LD50, LD90, LC50, LC90, fixed dose procedure, chemical analogy

Higher National Unit specification: support notes (cont)

Unit title: Health and Safety: Occupational Health Risks

Use of epidemiological techniques in the workplace:

- ◆ Uses and limitations
- ◆ Relative merits of different types of study: morbidity/mortality statistics, cross sectional, case control, cohort (retrospective and prospective)
- ◆ Application in health surveillance

Outcome 2

Describe and demonstrate understanding of the nature of hazardous substances in the workplace and the management of associated risks

Classification of hazardous substances:

- ◆ Physical form: solid, liquid, dust, fibre, mist, gas, fume, vapour
- ◆ Health effects
- ◆ Risk and safety phrases
- ◆ Sources of information: safety data sheets, MS series, CAS, medical databases

Risk factors:

- ◆ Identification of occupations at risk
- ◆ Risk assessment: numbers exposed, aerosol/particle size, concentration, type and duration of exposure, frequency of exposure, effect of mixtures, continuing and contingent exposures, thresholds of exposure
- ◆ Individual factors: susceptibility, body fluid solubility, synergy, age, sensitisation, morphology

Control measures and strategies:

- ◆ Hierarchy of control: elimination, substitution, engineering controls, isolation and segregation, safe systems of work, emergency procedures
- ◆ Carcinogens
- ◆ Personal protective equipment: types (applications and limitations), selection, use
- ◆ Workplace exposure limits

Monitoring and maintenance of control measures:

- ◆ Simple techniques for measurement of airborne contaminants
- ◆ Biological monitoring
- ◆ Monitoring and maintenance of control measures

Relevant statutory provisions:

- ◆ Chemicals (Hazard Information and Packaging for Supply) Regulations
- ◆ Control of Substances Hazardous to Health Regulations 2002
- ◆ Control of Asbestos at Work Regulations 2002
- ◆ Control of Lead at Work Regulations 2002
- ◆ Personal Protective Equipment at Work Regulations 1992

Higher National Unit specification: support notes (cont)

Unit title: Health and Safety: Occupational Health Risks

Outcome 3

Describe and demonstrate understanding of the nature of hazardous biological agents in the workplace and the management of associated risks

Classification of biological agents and their effects:

- ◆ Types of biological agent: viruses, bacteria, fungi
- ◆ Signs and symptoms of disease (body's defence mechanisms)
- ◆ Sources and symptoms of biological diseases: anthrax, cryptosporidiosis, farmer's lung, hepatitis, HIV, legionellosis, leptospirosis, E. coli

Risk factors:

- ◆ Identification of occupations at risk
- ◆ Risk assessment: numbers exposed, modes of transmission, zoonoses, mechanisms of attack, intentional work, opportunistic infection
- ◆ Individual factors: susceptibility, synergy, age, sensitisation

Control measures and strategies

- ◆ Hierarchy of control: eradication, reduced virulence, minimisation/suppression of aerosols, isolation and segregation, containment, ventilation (HEPA) filters, sharps control, immunisation, decontamination, disinfection
- ◆ Role of effluent and waste disposal, personal hygiene measures, personal protective equipment, biohazard signs

Monitoring

- ◆ Role of diagnostic laboratories
- ◆ Baseline testing
- ◆ Health surveillance

Relevant statutory provisions:

- ◆ Control of Substances Hazardous to Health Regulations 2002

Outcome 4

Describe and demonstrate understanding of the nature of hazardous physical agents in the workplace and the management of associated risks

Noise:

- ◆ Physics: basic definitions and concepts
- ◆ Health effects: occupations at risk, acute and chronic effects, audiometry
- ◆ Risk assessment: action levels, measurement (instrumentation, methodology, surveys)
- ◆ Controls: principles of noise reduction, their application, hearing protection
- ◆ Control of Noise at Work Regulations 2005

Higher National Unit specification: support notes (cont)

Unit title: Health and Safety: Occupational Health Risks

Vibration:

- ◆ Physics: basic concepts
- ◆ Health effects: occupations at risk, whole body and segmental vibration
- ◆ Risk assessment: exposure standards, measurement (accelerometer)
- ◆ Controls: whole body and segmental vibration; selection, installation/implementation, maintenance, personal protective equipment
- ◆ Control of Vibration at Work Regulations

Radiation:

- ◆ Physics: ionising and non-ionising; types, origins, sources
- ◆ Health effects: occupations at risk, acute and chronic effects
- ◆ Risk assessment: measurement, exposure standards/limits
- ◆ Controls:
- ◆ Non-ionising: design, siting, direction control, stray fields, screening, enclosures, distance, administrative controls, PPE
- ◆ Ionising: external (shielding, distance, time), internal (inhalation, ingestion, injection, absorption), classified person, Radiation Protection Adviser, Radiation Protection Supervisor
- ◆ Ionising Radiations Regulations 1999

Thermal environment:

- ◆ Health effects: high and low temperatures, humidity
- ◆ Risk assessment: measurement (human body/thermal environment parameters, instrumentation, heat indices), assessment of exposure
- ◆ Controls: air circulation, ventilation, workplace design, work organisation, health surveillance, personal protective equipment
- ◆ Workplace (Health, Safety and Welfare) Regulations 1992

Outcome 5

Describe and demonstrate understanding of the nature of psycho-social factors in the workplace and the management of associated risks

Stress:

- ◆ Health effects
- ◆ Risk assessment: organisational factors, personal relationships, physical factors, Signs of stress at work
- ◆ Risk reduction measures: organisation culture and management, management of change, clarity of roles, job design, staff selection, work schedules, work relationships
- ◆ Working Time Regulations 1998, other legal duties and relevant case law

Drugs, alcohol and other substance abuse at work:

- ◆ Health and safety effects of: prescribed or self-prescribed medicines; use of illegal drugs; substance abuse
- ◆ Alcohol abuse
- ◆ Risk assessment: testing

Higher National Unit specification: support notes (cont)

Unit title: Health and Safety: Occupational Health Risks

- ◆ Risk reduction measures: planning to cope with effects of drugs at work, guidance, support and training for staff
- ◆ Legal duties

Violence:

- ◆ Health and safety effects: definition of 'violence', extent of problem, consequences for organisations and individuals
- ◆ Risk assessment: working with the public, caring and teaching professions, psychiatric clients, alcohol/drug impaired people, working alone, home visiting, handling money/valuables, inspection and enforcement duties; risk identification: staff surveys, incident reporting
- ◆ Risk reduction measures: strategies for coping with violence, communication systems, staff training, control methods
- ◆ Legal duties

Outcome 6

Describe and demonstrate understanding of the nature of ergonomic factors in the workplace and the management of associated risks

Ergonomics:

- ◆ Health and safety effects: work related upper limb disorders, musculo-skeletal effects related to posture
- ◆ Risk assessment: work related factors
- ◆ Risk reduction measures: ergonomic design of tools, equipment, workplaces; job rotation, work patterns
- ◆ Legal duties

Display screen equipment (DSE):

- ◆ Health and safety effects: musculo-skeletal injury and discomfort, eye and eyesight effects, fatigue and stress
- ◆ Risk assessment: analysis of DSE workstations, interface between computer and operator/user, environment, task
- ◆ Risk reduction measures: ergonomic considerations of equipment and workstation design, work routine, eye and eyesight testing, training, information
- ◆ Health and Safety (Display Screen Equipment) Regulations 1992

Manual handling:

- ◆ Health and safety effects: sprains and strains, fractures, lacerations, hernia, back injury
- ◆ Risk assessment: task, individual capability, load, environment
- ◆ Risk reduction measures: automation, mechanical assistance, ergonomics, task layout and work routine, modifying the load, reorganising the work environment, personal considerations, kinetic handling techniques
- ◆ Manual Handling Operations Regulations 1992

Higher National Unit specification: support notes (cont)

Unit title: Health and Safety: Occupational Health Risks

Guidance on the delivery and assessment of this Unit

Due to logical progression, it would be beneficial to deliver Outcome 1 first. The other Outcomes may be delivered in any order.

Delivery and assessment should include extensive reference to the workplaces of candidates. Assignments should ideally be designed such that the candidate can base much of the evidence for assessment on his/her own workplace. Additionally or alternatively, case studies could be used.

The assessment for Outcome 1 should be set on completion of the knowledge skills elements for the Outcome. Outcomes 2-6 could be assessed through unsupervised assignments with a restricted word count.

Opportunities for developing Core Skills

There may be opportunities to develop aspects of the Core Skills in *Communication* (written) and *Problem Solving* through the Knowledge and Skills and assessments for this Unit.

Open learning

This Unit could be delivered by Open learning. However, while candidates would study out with the centre using materials provided, it would be necessary to attend the centre at intervals for workshops and assessments. For further information on Open and Distance Learning, please refer to the SQA publication, *Assessment and Quality Assurance of Open and Distance Learning* (SQA 2000).

Candidates with disabilities and/or additional support needs

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. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

General information for candidates

Unit title: Health and Safety: Occupational Health Risks

This Unit concentrates on the nature of occupational health risks and their effective management within statutory requirements. It is designed to develop the level of knowledge and understanding essential for a professional health and safety practitioner. The Unit covers the essential scientific underpinning knowledge, and then deals with hazardous agents, psycho-social and ergonomic factors.

The Unit follows a logical sequence divided into six sections:

- 1 Aspects of human physiology; occupational health and hygiene; toxicology; epidemiology.
- 2 Classification and management of risk from hazardous substances.
- 3 Classification and management of risk from hazardous biological agents.
- 4 Classification and management of risk from hazardous physical agents.
- 5 Classification and management of risk from harmful psycho-social factors.
- 6 Classification and management of risk relating to ergonomic factors.

Assessment requires you to meet six Outcomes, which correspond to the sections listed above. The assessment for Outcome 1 may be set on completion of the Knowledge and Skills elements for the Outcome. Outcomes 2-6 could be assessed through unsupervised assignments with restricted word counts.

On completion of the Unit you should be able to advise an organisation on suitable management systems for occupational health risks.