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**Syllabus summary –
National Diploma
in Occupational
Health and Safety**

September 2006

Syllabus summary - NEBOSH National Diploma in Occupational Health and Safety

Structure

The preparatory content and each of the first three units is further divided into a number of elements:

Core Skills (Preparatory content)

Element Number/Title	Recommended Hours of Tuition	Page
1. Part 1: Communication Skills	7	3
2. Part 2: Training Skills	3	3
Minimum total tuition time for Core Skills	10	
Recommended private study time	9	

Syllabus:

Unit A: Managing health and safety

Element Number/Title	Recommended Hours of Tuition	Page
A1. Principles of health and safety management	3	4
A2. Loss causation and incident investigation	5	4
A3. Identifying hazards, assessing and evaluating risk	12	5
A4. Risk control and emergency planning	12	5
A5. Organisational factors	12	6
A6. Human factors	12	6
A7. Principles of health and safety law	15	7
A8. Criminal law	6	7
A9. Civil law	12	8
A10. Measuring health and safety performance	6	8
Minimum total tuition time for Unit A	95	
Recommended private study time	75	

Unit B: Hazardous agents in the workplace

Element Number/Title	Recommended Hours of Tuition	Page
B1. General aspects of occupational health and hygiene	5	9
B2. Principles of toxicology and epidemiology	7	9
B3. Chemical agents – evaluating risk	5	10
B4. Hazardous substances – preventive and protective measures	6	10

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B5.	Hazardous substances – monitoring and maintenance of control measures	6	11
B6.	Biological agents	7	11
B7.	Physical agents 1 – noise and vibration	10	11
B8.	Physical agents 2 – radiation and thermal environment	9	12
B9.	Psycho-social agents	6	12
B10.	Ergonomic agents	4	12
	Minimum total tuition time for Unit B	65	
	Recommended private study time	50	

Unit C: Workplace and work equipment safety

Element Number/Title	Recommended Hours of Tuition	Page
C1. General workplace issues	5	13
C2. Principles of fire and explosion	6	14
C3. Workplace fire risk assessment	6	14
C4. The storage, handling and processing of dangerous substances	7	15
C5. Work equipment	9	15
C6. Machinery safety	6	16
C7. Mechanical handling	6	16
C8. Electrical safety	7	17
C9. Safety in construction and demolition	7	17
C10. Environmental pollution and waste management	6	18
	Minimum total tuition time for Unit C	65
	Recommended private study time	50

Unit D: Application of health and safety theory and practice

	Recommended Hours of Tuition	Page
Minimum total tuition time for Unit D	6	19
Recommended private study time	50	
Minimum total tuition time	241	
Recommended private study time	234	

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Core Skills Part 1: Communication skills

Learning outcomes

On completion of this element, candidates should be able to:

- Identify the phases in the communication cycle and demonstrate effective verbal communication in one to one and group situations
- Demonstrate effective listening skills and techniques and use different questioning techniques in order to gain information and understanding
- Present written information in a variety of formats, including formal reports and the use of references and supplementary information
- Explain the use of information technology for the effective search and presentation of information
- Outline the skills needed to effectively organise, run and control both formal and informal meetings
- Discuss how styles of leadership and management can influence individuals and help to resolve conflict.

Minimum hours of tuition: 7 hours

Core Skills Part 2: Training skills

Learning outcomes

On completion of this element, candidates should be able to:

- Identify the principles of systematic training and the sequence of its application from needs identification to evaluation
- Describe the effective planning, design and running of presentations.

Minimum hours of tuition: 3 hours

Unit A: Managing health and safety

Overall Learning Outcome

On completion of this unit, candidates will be able to demonstrate their understanding of the domain knowledge covered through:

- The application of knowledge to familiar and unfamiliar situations; and
- The critical analysis and evaluation of information presented in both quantitative and qualitative forms.

In addition each unit element has specific learning outcomes:

Element A1: Principles of health and safety management

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the moral, legal and economic reasons for a health and safety management system
- Discuss the principles of an effective health and safety management system with reference to appropriate examples
- Outline the requirements, role, structure (implementation and monitoring) of an effective health and safety policy
- Outline the role of health and safety specialists.

Minimum hours of tuition: 3 hours

Element A2: Loss causation and incident investigation

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the theory of loss and causality, their quantitative analysis, limitations of their application, and their presentation in numerical and graphical form
- Explain the statutory and the internal reporting and recording systems for loss events (injuries, ill-health, dangerous occurrences) and near-misses
- Describe loss investigations; the requirements, benefits, the procedures, the documentation, and the involvement of and communication with relevant staff and representatives.

Minimum hours of tuition: 5 hours

Element A3: Identifying hazards, assessing and evaluating risks

Learning outcomes

On completion of this element, candidates should be able to:

- Outline hazard identification using appropriate techniques
- Describe how to use internal and external sources of information in the identification of hazards and the assessment of risk.
- Explain how to evaluate and prioritise risk using qualitative, semi-quantitative and quantitative methods
- Describe the principles and techniques of failure tracing methodology.

Minimum hours of tuition: 12 hours

Element A4: Risk control and emergency planning

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the analysis, assessment and improvement of system failures and system reliability
- Outline the use of cost-benefit analysis in relation to risk control decisions
- Outline the principles of the prevention and control of risk including a description of a general hierarchy of control
- Describe the development, the main features and the operation of safe systems of work and permit-to-work systems
- Outline the principles of prevention, the choice of control measures and their cost benefit
- Explain the need for emergency planning, its benefits and regulatory requirements.

Minimum hours of tuition: 12 hours

Element A5: Organisational factors

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the internal and external influences on health and safety in an organisation
- Outline the different types of organisation, their structure, function and the concept of the organisation as a system
- Describe the organisational requirements for the management of health and safety and the encouragement of a good cultural environment
- Identify the various categories of third parties in a workplace, the relevant legislative requirements, responsibilities and control
- Describe the role, influences on and procedures for formal and informal consultation with employees in the workplace
- Describe the development of a health and safety management information system, the relevant legal requirements, and the data it should contain
- Describe health and safety culture and climate
- Outline the factors which can both positively and negatively affect health and safety culture and climate.

Minimum hours of tuition: 12 hours

Element A6: Human factors

Learning outcomes

On completion of this element, candidates should be able to:

- Describe the factors which give rise to specific patterns of safe and unsafe behaviour in the working environment
- Explain the nature of the perception of risk and its relationship to performance in the workplace
- Discuss the impact of human error in a range of major disasters
- Describe appropriate methods of improving individual human reliability in the workplace
- Describe how organisational factors could contribute to improving human reliability
- Describe how job factors could contribute to improving human reliability.

Minimum hours of tuition: 12 hours

Element A7: Principles of health and safety law

Learning outcomes

On completion of this element, candidates should be able to:

- Describe the sources and types of law in force in the UK relevant to health and safety
- Explain the concept of absolute and qualified duties in relation to health and safety legislation
- Outline the influence and role of the European Union on UK health and safety legislation
- Describe the status and procedure for the creation of UK Acts and Regulations
- Describe the structure and functions of courts and related institutions in the UK
- Describe the responsibilities and powers of enforcing agencies and officers and explain the range of options related to enforcement action, their implications and appeal procedures.

Minimum hours of tuition: 15 hours

Element A8: Criminal law

Learning outcomes

On completion of this element, candidates should be able to:

- Discuss the status and role of relevant acts, regulations, approved codes of practice, and guidance in their application to health and safety at work
- State and explain the defences available in criminal health and safety and manslaughter cases.

Minimum hours of tuition: 6 hours

Element A9: Civil law

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the duties owed in civil law by an employer to his employees and others and describe the standards to be achieved in discharging the duties
- Describe breach of statutory duty, the main defences available and the procedure for assessment of damage under civil law.
- Outline the main duties owed by the occupiers of premises.
- Outline the differences between public, private and statutory nuisances.

Minimum hours of tuition: 12 hours

Element A10: Measuring health and safety performance

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the purpose of performance measurement in relation to health and safety objectives and arrangements
- Explain the need for, objectives and limitations of health and safety monitoring systems
- Describe the variety of monitoring and measurement techniques.
- Describe a range of techniques to communicate monitoring and performance data

Minimum hours of tuition: 6 hours

Unit B: Hazardous agents in the workplace

Overall Learning Outcome

On completion of this unit, candidates will be able to demonstrate their understanding of the domain knowledge covered through:

- The application of knowledge to familiar and unfamiliar situations; and
- The critical analysis and evaluation of information presented in both quantitative and qualitative forms.

In addition each unit element has specific learning outcomes:

Element B1: General aspects of occupational health and hygiene

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the purpose and nature of the occupational health and hygiene discipline and practice
- Describe the role, organisation, function and composition of occupational health and hygiene staff
- Describe human anatomical systems and sensory organs.

Minimum hours of tuition: 5 hours

Element B2: Principles of toxicology and epidemiology

Learning outcomes

On completion of this element, candidates should be able to:

- Describe the classification of hazardous substances with reference to appropriate legislation
- Describe the main effects and route of attack of hazardous substances on the human body
- Explain the relevance of toxicological data to the identification of work related ill-health
- Explain the principles of epidemiology and its application in health surveillance of a workforce.

Minimum hours of tuition: 3 hours

Element B3: Hazardous substances – evaluating risk

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the factors which should be considered when assessing risks from hazardous substances
- Describe Workplace Exposure Limits (WELs), how they are established, and the criteria for their application to the workplace.

Minimum hours of tuition: 3 hours

Element B4: Hazardous substances – preventive and protective measures

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the strategies used in the prevention and control of exposure to hazardous substances
- Explain the specific strategy to be adopted when considering the control of exposure to carcinogenic substances
- Describe the various types of Personal Protective Equipment (PPE) available for use with hazardous substances, their effectiveness, and the relevant specifications and standards to be met.

Minimum hours of tuition: 6 hours

Element B5: Hazardous substances – monitoring and maintenance of control measures

Learning outcomes

On completion of this element, candidates should be able to:

- Describe the strategies, methods, and equipment for the sampling and measurement of airborne contaminants
- Outline the principles of biological monitoring
- Outline the statutory and other requirements for the monitoring and maintenance of control measures for hazardous substances.

Minimum hours of tuition: 6 hours

Element B6: Biological agents

Learning outcomes

On completion of this element, candidates should be able to:

- Identify and describe the effects on the human body of the various types of biological agent found at work
- Explain the assessment of, and control of risk from exposure to biological agents at work.

Minimum hours of tuition: 6 hours

Element B7: Physical agents 1 – noise and vibration

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the basic physical concepts relevant to noise, its effects on the individual and the assessment and control of exposure
- Explain the basic physical concepts relevant to vibration, its effects on the individual and the assessment and control of exposure.

Minimum hours of tuition: 10 hours

Element B8: Physical agents 2 – radiation and thermal environment

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the basic physics of ionising and non-ionising radiation
- Outline the effects of exposure to non-ionising radiation, its measurement and control
- Outline the effects of exposure to ionising radiation, its measurement and control
- Outline the effects of extremes of temperature, its measurement and control.

Minimum hours of tuition: 9 hours

Element B9: Psycho-social agents

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the effects of work-related stress on individuals, its identification, control and the applicable legal and other standards
- Outline the effects on health and safety at work of alcohol, prescribed and unprescribed drugs, appropriate testing methods and the effective implementation of management systems and support
- Outline the issues, risk factors and appropriate controls for work-related violence.

Minimum hours of tuition: 6 hours

Element B10: Ergonomic factors

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the conditions and effects resulting from poor ergonomics in the workplace and the risk reduction methods that can be applied
- Explain the ill-health effects associated with the use of display screen equipment together with appropriate risk assessment and control strategies.
- Explain the assessment and control of risk from manual handling activities and the main injuries that can occur.

Minimum hours of tuition: 4 hours

Unit C: Workplace and work equipment safety

Overall Learning Outcome

On completion of this unit, candidates will be able to demonstrate their understanding of the domain knowledge covered through:

- The application of knowledge to familiar and unfamiliar situations; and
- The critical analysis and evaluation of information presented in both quantitative and qualitative forms

In addition each unit element has specific learning outcomes:

Element C1: General workplace issues

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the need for, and factors involved in, the provision and maintenance of a safe and healthy working environment, with specific reference to access and egress, temperature, lighting, welfare arrangements, first-aid and safety signage
- Describe the assessment of risk and safe working practices associated with work in confined spaces
- Outline the main issues associated with maintaining structural safety of workplaces
- Outline the dangers, precautions and safe working procedures when working at heights.

Minimum hours of tuition: 5 hours

Element C2: Principles of fire and explosion

Learning outcome

On completion of this element, candidates should be able to:

- Describe the properties of flammable and explosive materials, the mechanisms by which they ignite, examples of relevant case studies, and the relevant legislation
- Describe the behaviour of structural materials, buildings and building contents in a fire
- Outline the main principles and practices of fire and explosion prevention and protection.

Minimum hours of tuition: 6 hours

Element C3: Workplace fire risk assessment

Learning outcomes

On completion of this element, candidates should be able to:

- Explain the processes involved in the identification of hazards and the assessment of risk from fire
- Describe common fire detection systems and procedures
- Outline the factors to be considered when selecting fixed and portable fire-fighting equipment for the various types of fire
- Outline the factors to be considered in the provision and maintenance of means of escape
- Explain the purpose of, and essential requirements for, emergency evacuation procedure
- Outline the main legal requirements for fire safety in the workplace.

Minimum hours of tuition: 6 hours

Element C4: Storage, handling and processing of dangerous substances

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the main physical and chemical characteristics of industrial chemical processes
- Discuss the contribution of typical mechanical and systems failures to major accidents
- Outline the main principles in the safe storage, handling and transport of dangerous, toxic and corrosive substances.

Minimum hours of tuition: 7 hours

Element C5: Work equipment

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the selection, assessment, use and maintenance of work equipment, together with relevant legislation
- Outline the main duties of the manufacturers and suppliers of work equipment
- Outline the main ergonomic, anthropometric and human reliability issues which should be considered when designing work equipment
- Outline, with reference to relevant case studies, the likely causes of the failure of work equipment, together with testing and prevention strategies that can be employed
- Outline the principle advantages and safe working procedures for the maintenance and testing of work equipment
- Outline the purpose, nature and requirements for statutory examinations
- Outline the main components of a pressure system, the likely cause of failure and the associated prevention strategy.

Minimum hours of tuition: 9 hours

Element C6: Machinery safety

Learning outcomes

On completion of this element, candidates should be able to:

- Outline with examples, the classification, assessment and control of risk of machinery hazards
- Outline the role and application of European standards relating to machinery
- Outline the main safety issues which should be considered when designing and operating programmable electronic systems (PES).

Minimum hours of tuition: 6 hours

Element C7: Mechanical handling

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the factors which affect the stability of work vehicles
- Identify the main hazards associated with the use of lift trucks, lifting equipment, hoists, lifts and conveyor equipment and describe appropriate precautions to reduce the risks where possible
- Outline the specific hazards and safeguards associated with automated warehouses.

Minimum hours of tuition: 6 hours

Element C8: Electrical safety

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the basic principles of electricity
- Outline the dangers of electricity and the principles of first aid treatment for electrical injuries
- Outline the issues relevant to the installation of electrical systems that will perform effectively and safely within the working environment and can readily be used safely, inspected and maintained effectively
- Outline the main principles of the design and use of electrical systems and equipment in adverse or hazardous environments
- Outline the main principle for safe working in the vicinity of high voltage systems
- Identify the main hazards and outline the principle precautions associated with the use of portable electrical equipment.

Minimum hours of tuition: 7 hours

Element C9: Safety in construction and demolition

Learning outcomes

On completion of this element, candidates should be able to:

- Outline the principle duties and specific responsibilities for the effective management of health and safety on construction sites
- Outline the principle hazards and precautions associated with demolition work
- Outline the dangers, precautions and safe working procedures when working at heights or with excavations
- Describe the safe use of the various types of mobile equipment used on construction sites.

Minimum hours of tuition: 7 hours

Element C10: Environmental pollution and waste management

Learning outcomes

On completion of this element, candidates should be able to:

- Identify potential sources and impacts of environmental pollution and appropriate monitoring strategies
- Describe the various types of waste, their categorisation, treatment, disposal, and documentation
- Outline the need for emergency response measures.

Minimum hours of tuition: 6 hours

Unit D: Application of health and safety theory and practice

Purpose and Aim

- The candidate is required to carry out a detailed review of the health and safety performance of a workplace or organisation and produce a justified action plan to improve performance.
- The assignment will require the candidate to apply the knowledge and understanding gained from their studies of elements of Units A, B and C in a practical environment and to carry out critical analysis and evaluation of information gathered during the review. The level of work should be that expected of a competent occupational health and safety practitioner working within an organisation.

The report should include:

- A description of the chosen workplace/organisation to set a context for the assignment. The candidate will need to consider the legal framework within which the workplace/organisation operates;
- An overview of the current health and safety management arrangements in which the candidate should critically review the health and safety management system;
- A survey of a wide range of significant hazards within the workplace. The candidate should prioritise the identified hazards and, depending on the nature and extent of identified hazards, for each of **two** of the hazards, one physical and one appropriate to health and welfare, carry out a risk assessment. This should include an evaluation of the effectiveness of the organisation in controlling the risks arising from the hazards identified and proposals to further control the hazard(s) and reduce risks;
- Conclusions which summarise the main issues identified in the candidate's work together with justified recommendations for improvement;
- A costed and prioritised action plan for the implementation of the candidate's recommendations in each of the two areas;
- An executive summary of the report.

Unit assessment summary

Core Skills

The preparatory content covers the core skills of communication and training that students will need to complete all four qualification units and is **not assessed separately**. **Assessment of these core skills is incorporated across the syllabus as part of the written examinations (Units A, B & C) and the written assignment (Unit D)**. Core Skills should be presented as introductory content at the beginning of the programme and internally assessed by the accredited centre in order to determine whether the student is adequately prepared to progress to the qualification units.

Units A-D

Units A, B and C are each assessed by one three-hour examination. Candidate scripts are marked by external examiners appointed by NEBOSH.

Unit D is assessed via a workplace-based written assignment of around 8,000 words. Assignments are marked by external examiners appointed by NEBOSH.

Further details

The full syllabus and further information regarding the practical unit is available in the NEBOSH Guide to the qualification available for purchase via the NEBOSH website (www.nebosh.org.uk).

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