Health and Safety Management for Construction (International)

Qualification guide for Learning Partners

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Qualification overview

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Qualification key features

Assessment unit codes and titles:	**Unit CI1:** Managing construction safely	
Assessment: Unit CI1:	**Assessment Type** Open book examination (OBE)	**Assessment Time** Learners will have 48 hours to complete and submit their answers. They do not have to complete the examination in one go.
Modes of study:	Taught (face-to-face), open and distance learning Part-time Block release e-learning	
Notional learning hours:	Taught hours: 70 Private study: 40 Assessment: 8 Total hours: 118	
Qualification level and number of credits:	Notional SCQF Level 7 with 12 credits (Equivalent to RQF Level 4)	
Entry requirements:	None	
Recommended minimum standards of English:	Learners: International English Language Testing System 6.0 or higher Tutors: International English Language Testing System 7.0 or higher	
Languages available:	English	
Assessment dates:	Standard date	
Pass standards:	The provisional pass mark for Unit CI1 is 45%. More information on how provisional pass marks are set can be found in our FAQs on the NEBOSH website. A 'Pass' must be obtained to achieve the NEBOSH Health and Safety Management for Construction	
Qualification grades:	The qualification grade is based on the result from Unit CI1 Distinction: 75% or higher Credit: 65% - 74% Pass: 45% - 64%	

Qualification overview

Introduction

The Health and Safety Management for Construction qualification (CI) is aimed at managers, supervisors and anybody who manages construction health and safety as part of their duties within their organisation.

The CI looks at construction workplace health and safety issues and can be applied in many sectors. On completion of the qualification, your learners will be able to:

- manage construction risks and hazards;
- produce or contribute to, a construction health and safety plan;
- help their organisation to manage contractors;
- positively influence health and safety culture and behaviour;
- carry out a risk assessment of a construction site and manage a range of construction hazards;
- recognise workplace changes and their impacts and understand how to minimise these impacts;
- develop basic safe systems of work that include emergency arrangements and know when to use a permit-to-work system; and
- take part in incident investigations.

Syllabus development and review

We developed the syllabus following extensive consultation with key stakeholders, notably Learning Partners, employers and subject-matter experts. NEBOSH would like to take this opportunity to thank all those who participated in the development of the new CI.

Learning hours

A programme of study needs to be based around a minimum of **70 taught hours** and approximately **40 self-study hours**.

A full-time block release course would take approximately 9 1/2 days and a part-time day release course would be spread over approximately 10 weeks. For learners studying by open or distance learning, the tuition hours should be added to the recommended private study hours to give the minimum number of hours that this mode of study will require.

Teaching of the syllabus content

Although the syllabus sets out the elements in a specific order, your tutors can teach the elements in any order that they feel is appropriate.

The entire syllabus is assessed by an Open Book Examination (Unit CI1).

Qualification overview

Minimum standard of English required for learners

The standard of English required by learners studying for the CI must be such that they can both understand and articulate the concepts contained in the syllabus. It is important to stress that the onus is on you to determine your learners' standards of proficiency in English.

Qualification type

NEBOSH qualifications are categorised as 'Other' qualifications by SQA Accreditation in Scotland. These are categorised as Vocationally-Related Qualifications (VRQs) in England, Wales and Northern Ireland.

VRQs provide the knowledge and practical skills required for particular job roles through a structured study-based training programme, which combines the assessment of knowledge and understanding in written examinations the practical application of learning in the workplace.

VRQs are a popular type of qualification because they are nationally recognised, flexible and offer routes for progression to employment or further study.

Achieving the qualification

The CI has one unit assessment; your learners must achieve a 'Pass' in this unit in order to be awarded the qualification.

Achieving my NEBOSH Construction Certificate gave me confidence and acted as an outward demonstration of my capabilities. It really was my foot in the door to the career I wanted for myself. After achieving my certificate and adding it to my profile, I was immediately contacted by recruiters offering me fantastic opportunities.

Oliver Bones

Principal - Safety, Health, Environment & Wellbeing Business Partner

AECOM

Qualification overview

The assessment

The aim of this assessment is for learners to practically apply the knowledge and understanding gained from their studies of the CI syllabus. To do this, they will need to complete an Open Book Examination (OBE) based on a fictional construction site, which includes theoretical and practical application questions and a scenario-based risk assessment exercise.

You can find all the information about the OBE, including a sample OBE paper, on the NEBOSH website.

Individual learner feedback

For more information on the assessment feedback provided for this qualification, please visit the NEBOSH website.

Conflict of interest

Your employees (eg head of Learning Partner, tutors, administrators, examinations officers, invigilators) must declare in writing to NEBOSH any employee and/or family, spouse or other close personal relationship with any person undertaking a NEBOSH examination or assessment. Further information can be found in the "Instructions for conducting examinations" document.

Re-sitting a unit

Your learners can re-sit a unit if they were referred.

There is no limit to the number of times a learner can re-sit a unit. A refund will not be given if the learner registers to re-sit a unit before an original unit result is known. If the learner's re-sit result is lower than the original mark, they will keep the original mark awarded for the unit. Re-sit marks are not capped.

Issue of qualification parchment

When your learners have passed the assessment, they are considered to have completed the whole qualification. We will send out the qualification parchment to learners who have successfully completed the unit within 20 working days. We will only issue individual unit certificates on written request.

Once we issue the result of the successful unit, your learners will have 20 working days to either:

- tell us in writing that they want to re-sit the unit to improve their grade (see "Re-sitting a unit" for further information); or
- submit an Enquiry About Result (EAR) request; please see the EAR policy on the NEBOSH website.

Syllabus

Syllabus

Syllabus overview

Element	Content	Suggested teaching hours
1	The foundations of construction health and safety management	11
2	Improving health and safety culture and assessing risk	7
3	Managing change and procedures	6
4	Excavation	3
5	Demolition	3
6	Mobile plant and vehicles	4
7	Working at height	6
8	Musculoskeletal health and load handling	6
9	Work equipment	5
10	Electricity	3
11	Fire	3
12	Chemical and biological agents	6
13	Physical and psychological health	7
	Total hours	**70**

Syllabus

Learning outcomes and assessment criteria

Learning outcome The learner will be able to:	Related content	Assessment criteria	Assessment
Justify health and safety improvements using moral and financial arguments	**1.1**	1.1 Discuss the moral and financial reasons for managing health and safety in the workplace	OBE
Advise on the main roles, competencies and duties under construction legislation and on a range of general construction site issues	**1.2 - 1.7**	1.2 Summarise the main health and safety duties under construction legislation and how contractors should be selected, monitored and managed; and Identify how technology can be used to effectively plan and manage construction project lifecycles. 1.3 Summarise the types of construction work and range of activities 1.4 Identify what to consider during a construction site assessment 1.5 Identify how to keep a site secure and in good order 1.6 Summarise how to manage temporary construction works 1.7 Outline what welfare arrangements should be on site and other particular construction issues	OBE
Positively influence health and safety culture and behaviour to improve performance in their organisation	**2.1 - 2.3**	2.1 Describe the concept of health and safety culture and how it influences performance 2.2 Summarise the human factors which positively or negatively influence behaviour at work in a way that can affect health and safety 2.3 Summarise how health and safety culture at work can be improved	OBE

Syllabus

Learning outcome The learner will be able to:	Related content	Assessment criteria	Assessment
Recognise workplace changes that have significant health and safety impacts and effective ways to minimise those impacts	**3.1**	3.1 Discuss typical workplace changes that have significant health and safety impacts and ways to minimise those impacts	OBE
Develop basic safe systems of work (including taking account of typical emergencies) and knowing when to use permit-to-work systems for special risks	**3.2 - 3.4**	3.2 Describe what to consider when developing and implementing a safe system of work for general activities 3.3 Explain the role, function and operation of a permit-to-work system 3.4 Discuss typical emergency procedures (including training and testing) and how to decide what level of first aid is needed in the workplace	OBE
Take part in incident investigations	**3.5**	3.5 Explain why and how incidents should be investigated, recorded and reported	OBE
Measure and monitor health and safety performance data	**3.6**	3.6 Explain how to obtain, analyse and report health and safety performance data, including the benefits and limitations of this approach.	OBE
Assessing risks, recognising a range of common hazards, evaluating risks (taking account of current controls), recommending further control measures, and planning actions	**2.4** **4 - 13**	2.4 Explain the principles of the risk assessment process 4 - 13 Produce a risk assessment that considers a wide range of identified construction hazards (drawn from elements 4 - 13)	OBE

Syllabus

Syllabus content

Element 1: The foundations of construction health and safety management	
1.1	**Morals and money** • Moral and societal expectations of good standards of health and safety • The financial cost of incidents (insured and uninsured costs, direct and indirect) • The financial impact of non-conformances and reworks • The role of enforcement authorities
1.2	**The management of construction activities** • Managing construction activities: > managing the risks by designing out forseeable hazards > appointing the right people and organisations at the right time > making sure everyone has the information, instruction, training and supervision they need to carry out their jobs in a way that secures health and safety > co-operating, communicating and co-ordinating work between all parties involved in the project > consulting with workers and engaging with them to promote and develop effective measures to secure health, safety and welfare • The general duties of the following roles: > employers > principal contractors > designers, engineers and architects > clients • Pre-selection and management of contractors • Use of technology to effectively plan and manage construction project lifecycles, such as use of 3D modelling (eg. building information modelling), drones and associated structured data; and the benefits of this approach.

Syllabus

Element 1: The foundations of construction health and safety management	
1.3	**Types, range and issues relating to construction activities** • Types of construction in Article 2 of the ILO Safety and Health Convention C167 and the ILO Code of Practice on Safety and Health in Construction • Types of construction work and range of activities: construction, alteration and maintenance of premises; demolition or dismantling; clearance; excavation; structural work; site movements; service maintenance • Why you need to maintain the stability of structures
1.4	**Site assessment and control measures** • Initially assessing the site: historical and current use, likelihood of asbestos and contaminants • Area of site, topography and features of the surrounding area • Site control measures: site planning, preparation for specialist activities, security and client/occupier arrangements
1.5	**Site order and security** • The need for safe entry and exit from the site • Safe and suitable arrangement of the working space, including housekeeping arrangements • The requirement to identify the site perimeter, either with suitable signs or fencing • Any out-of-hours security arrangements (if necessary)
1.6	**Management of temporary works** • Management of parts of the works that allow or enable construction of, protect, support or provide access to, the permanent works (which may or may not remain in place at the completion of the works) eg falsework/ formwork, excavations and temporary equipment foundations • The role of temporary works professionals in this process

Element 1: The foundations of construction health and safety management	
1.7	**Other construction issues including welfare arrangements** • Welfare requirements for: > toilets and washing facilities including planning for work undertaken on sites remote from fixed facilities » Considering gender-specific needs > changing rooms and lockers > rest and eating facilities > drinking water • Particular construction issues relating to: > use of migrant workers > temporary nature of construction activities and the constantly changing workplace > time pressures > weather conditions > levels of numeracy and literacy of workers > communicating with workers speaking different languages > Recognising the symptoms of fatigue and how to reduce it

Syllabus

Element 2: Improving health and safety culture and assessing risk	
2.1	**Health and safety culture** • Meaning of the term 'health and safety culture' • Relationship between health and safety culture and health and safety performance • Influence of peers on health and safety culture
2.2	**How human factors influence behaviour positively or negatively** • Organisational factors, including: culture, leadership, resources, work patterns, communications • Job factors, including: task, workload, environment, display and controls, procedures • Individual factors, including: competence, skills, personality, attitude and risk perception • Link between individual, job and organisational factors
2.3	**Improving health and safety culture** The impact of the following on health and safety culture: • Gaining management committment • Promoting health and safety standards by leadership and example, and appropriate use of disciplinary procedures • Competent workers (including the role of training) • Good communication within the organisation: > benefits and limitations of different methods of communication (verbal, written and graphic) > use and effectiveness of different types of internal communication > co-operation and consultation with the workforce and contractors, including: » appointment, functions and entitlements of worker representatives (trade union appointed and elected) » benefits of worker participation (including worker feedback) » The role of health safety committees

Syllabus

Element 2: Improving health and safety culture and assessing risk

2.4 Assessing risk

- Meaning of hazard, risk, risk profiling, and risk assessment
- Risk profiling: what is involved? Who should be involved? The risk profiling process
- Purpose of risk assessment and the 'suitable and sufficient' standard it needs to reach (see ILO "A 5 Step Guide for employers, workers and their representatives on conducting workplace risk assessments")
- A general approach to risk assessment:
  - > identify hazards:
    - » sources and form of harm; sources of information to consult; use of task analysis, legislation, manufacturers' information, incident data, guidance
  - > identify who might be harmed and how:
    - » including workers, operators, maintenance staff, cleaners, contractors, visitors, public
  - > evaluate risk and decide on the health and safety risk control measures (clause 8.1.2 of ISO 45001:2018):
    - » remove the hazard and control the risk
    - » prevent access to the hazard
    - » organise work to reduce hazard exposure
    - » provide welfare facilities and PPE
  - > record who is responsible for implementing each control measure, and the timeframe
  - > record the findings, monitor and review the risk assessment, and update when necessary
- Application of risk assessment for specific types and special cases
  - > examples of when they are required, including fire, computer workstations, manual handling, hazardous substances, noise, vibration
  - > the use of specific risk assessment methods to enable systematic considerations of all relevant issues that contribute to the risk
- Special case applications to young people, expectant and nursing mothers; also consideration of workers with health conditions or impairments and lone workers

Syllabus

Element 3: Managing change and procedures	
3.1	**Management of change** • Typical types of change faced in the workplace and the possible impact of such change, including: construction works, change of process, change of equipment, change in working practices • Managing the impact of change: > communication and co-operation > risk assessment > appointment of competent people > segregation of work areas > amendment of emergency procedures > welfare provision • Review of change (during and after)
3.2	**Safe systems of work for general work activities** • Why workers should be involved when developing safe systems of work • Why procedures should be recorded/written down • The differences between technical, procedural and behavioural controls • Developing a safe system of work: > analysing tasks, identifying hazards and assessing risks > introducing controls and formulating procedures > instruction and training in how to use the system • Monitoring the system
3.3	**Permit-to-work systems** • Meaning of a permit-to-work system • Why permit-to-work systems are used • How permit-to-work systems work and are used • When to use a permit-to-work system, including: hot work, work on non-live (isolated) electrical systems, machinery maintenance, confined spaces, work at height

Syllabus

Element 3: Managing change and procedures	
3.4	**Emergency procedures** • Why emergency procedures need to be developed • What arrangements must be made when planning emergency procedures and first aid provisions, taking into account: > the type of work for which the construction site is being used > characteristics and size of the construction site > work equipment being used > number of people present > properties of any material on site • Principles of fire/emergency evacuation, including: means of escape, emergency evacuation procedures, role and appointment of fire marshals/wardens, fire drills and provisions for people with disabilities • Suitable emergency arrangements when working near water • Continual review of emergency procedures as a build continues
3.5	**Learning from incidents** • The different levels of an accident investigation (see ILO "Investigation of Occupational Accidents and Diseases - A Practical Guide for Labour Inspectors") > step one: preparations before starting the investigation > step two: gathering the information > step three: analysing the information > step four: identifying preventative/risk control measures > step five: implementing an action plan > step six: completing the report/documenting the information • How occupational incidents and diseases are recorded and notified by the organisation ("Recording and notification of occuptional accidents and diseases", ILO Code of Practice, chapters 4 - 7)

Syllabus

Element 3: Managing change and procedures	
3.6	**Health and safety performance data** • Differences between active and reactive monitoring • Active monitoring methods (including health and safety inspections, sampling, and tours) and their usefulness • Reactive monitoring measures (including ill-health, incident data, and incident investigation) and their usefulness • The difference between leading and lagging indicators • Benefits and limitations of analysing health and safety performance data • The use of internal data in making informed decisions • Interpretation of raw data: accident/incident frequency rate, accident incidence rate, incident* severity rate, ill-health prevalence rate • Reporting on health and safety performance

Syllabus

Element 4: Excavation	
4.1	**Excavation work hazards and assessment** • The hazards of work in and around excavations: buried services, falls of people/equipment/material into excavation, collapse of sides, collapse of adjacent structures, water ingress, use of cofferdams and caissons, contaminated ground, toxic and asphyxiating atmospheres, mechanical hazards • Overhead hazards, including power lines (cross-reference to electricity) • Risk assessment: factors to consider (depth, soil type, type of work, use of mechanical equipment, proximity of roadways/structures/etc, presence of public, weather, etc).
4.2	**Control measures for excavation work** • Controls: > identification/detection and marking of buried services; safe digging methods > methods of supporting excavations (eg steel sheets, support boxes) > means of access > crossing points > barriers, lighting and signs > safe storage of spoil > de-watering methods, including well points and sump points > positioning and routeing of vehicles, plant and equipment > personal protective equipment • Particular requirements for contaminated ground (soil testing, welfare facilities, health surveillance, etc) • Inspection requirements for excavations and excavation support systems (see above)
4.3	**Safe working in confined spaces** • Types of confined spaces and why they are dangerous • The main hazards and associated risks with working within a confined space • What should be considered when assessing risks from a confined space • The precautions to be included in a safe system of work for confined spaces

Syllabus

Element 5: Demolition	
5.1	**Demolition and dismantling hazards** • The meaning of: > deconstruction > piecemeal demolition > deliberate controlled collapse • Selection of the appropriate method • Hazards and control measures relating to deconstruction and dismantling
5.2	**Purpose and scope of pre-demolition, deconstruction or refurbishment survey** • When you should carry out a pre-demolition survey • The work should be planned and undertaken only under the supervision of a competent person • Identification of key structural elements including pre and post tensioned components • Identification of location and type of services • Identification, significance and extent of any dilapidation of the structure • Review of drawings, structural calculations and health and safety file related to the structure • Review of all structural alterations carried out on the structure in the past

Syllabus

Element 6: Mobile plant and vehicles

6.1 Safe movement of people

- Hazards to pedestrians:
  - > being struck by moving, flying or falling objects
  - > collisions with moving vehicles
  - > striking against fixed or stationary objects

6.2 Safe use of vehicles and plant

- Hazards from workplace transport operations and plant (vehicle movement, non-movement)
- Control measures to manage workplace transport:
  - > safe site (design and activity)
    - » suitability of traffic routes (including site access and egress pedestrian-only zones and crossing points)
    - » spillage control
    - » management of vehicle movements
    - » environmental considerations: visibility/lighting, gradients, changes of level, surface conditions (use of non-slip coatings)
    - » maintenance and checking of traffic routes
    - » segregating pedestrians and vehicles and measures to be taken when segregation is not practicable
    - » protective measures for people and structures (barriers, marking signs, warnings of vehicle approach and reversing)
    - » site rules (including speed limits) and signage
  - > safe vehicles
    - » vehicle selection
    - » vehicle inspection and maintenance
  - > safe drivers
    - » selection and training of drivers
    - » types of reversing assistant

Syllabus

Element 6: Mobile plant and vehicles

6.3 Work-related driving

- Managing work-related driving
  - > plan
    - » assess the risks
    - » policy
    - » top management committment
    - » roles and responsibilities
  - > do
    - » co-operation between departments (where relevant)
    - » adequate systems in place, including maintenance strategies
    - » communication and consultation within the workforce
    - » provision of adequate instruction and training
  - > check
    - » monitor performance (to ensure the policy is working correctly)
    - » ensure all workers report work-related road incidents or near misses
  - > act
    - » review performance and learn from experience
    - » regularly update the policy
- Work-related driving control measures:
  - > safe driver (competence – checks on level of skill/experience, validity of driving licence; provision of instruction; fitness to drive; effects of fatigue)
  - > safe vehicle (vehicles fit for purpose for which they are being used; maintained in a safe condition; adequate restraints for securing goods)
  - > safe journey (planning of routes; realistic work schedule – enough time to complete the journey safely, allowing for driving breaks; consideration of weather conditions; consideration of legal driving hours where relevant)

Syllabus

Element 7: Working at height

7.1 Working at height hazards and controls

- What affects risks from working at height, including vertical distance, fragile roofs, deterioration of materials, unprotected edges, unstable/poorly maintained access equipment, weather conditions and falling materials
- Approach to working safely at height:
  - > avoid working at height by, for example, using extendable tools to work from ground level; assembly of components/equipment at ground level
  - > prevent a fall from occurring by using an existing workplace that is known to be safe, such as a solid roof with fixed guardrails; use of suitable equipment such as mobile elevating work platforms (MEWPs), scaffolds; work restraint systems
  - > minimise the distance and/or consequence of a fall, by collective measures such as safety nets and airbags installed close to the level of work, and personal protective measures such as fall-arrest systems
- Main precautions necessary to prevent falls and falling materials, including proper planning and supervision of work
- Emergency rescue
- Provision of training, instruction and other measures

7.2 Safe working practices for access equipment and roof work

- Scaffolding
  - > design features of independent tied, putlog, fan, cantilevered and mobile tower scaffolds
  - > safety features (including sole-boards, base plates, toe-boards, guardrails, boarding, brick guards, debris netting)
  - > requirements for scaffold erectors
  - > means of access
  - > design of loading platforms
  - > scaffold hoists (people, materials)
  - > ensuring stability: effects of materials, weather, sheeting, etc; protection from impact of vehicles; inspection requirements

Syllabus

Element 7: Working at height	
7.2	• Use of ladders, stepladders, trestles, staging platforms, leading edge protection systems, MEWPs and Mast Climbing Work Platforms (MCWPs) • Other techniques: > boatswain's chair and training required for use > cradles (including suspension from cranes) > rope access • How fall arrest equipment is used and what its aims are: > harnesses > safety nets > soft landing systems > crash decks > emergency procedures (including rescue) > suspension fainting in the use of rope and harnesses • Roof work: > means of access > edge and leading edge protection > crawling boards > fall arrest equipment (as above)
7.3	**Protection of others** • Demarcation, barriers, tunnels, signs • Marking, lighting • Sheeting, netting and fans • Head protection

Syllabus

Element 8: Musculoskeletal health and load handling

8.1 Musculoskeletal disorders and work-related upper limb disorders

- Meaning of musculoskeletal disorders (MSDs) and work-related upper limb disorders (WRULDs)
- Examples of repetitive construction activities that can cause MSDs and WRULDs
- Possible ill-health conditions from poorly designed tasks and workstations
- Avoiding/minimising risks from poorly designed tasks and workstations by considering:
  - > task (including repetitive, strenuous)
  - > environment (including lighting, glare)
  - > equipment (including user requirements, adjustability, matching the workplace to individual needs of workers)

8.2 Manual handling hazards and control measures

- Common types of manual handling injuries
- Good handling technique for manually lifting loads
- Avoiding/minimising manual handling risks by considering the task, the individual, the load and the working environment

8.3 Load-handling equipment

- Hazards and controls for common types of load-handling aids and equipment: cranes; hoists; fork-lift trucks; pallet trucks; sack trucks and trolleys; telescopic handlers
- Requirements for lifting operations using mechanically-operated load handling equipment:
  - > strong, stable and suitable equipment
  - > positioned and installed correctly
  - > visibly marked with safe working load
  - > lifting operations are planned, supervised and carried out in a safe manner by competent persons
  - > special requirements for lifting equipment used for lifting people
- Periodic inspection and examination/testing of lifting equipment

Syllabus

Element 9: Work equipment	
9.1	**General requirements for work equipment** • Providing suitable equipment, including the requirement for conformity marking • Preventing access to dangerous parts of machinery • When the use and maintenance of equipment with specific risks needs to be restricted • Providing information, instruction and training about specific risks to people at risk, including users, maintenance staff and managers • Why equipment should be maintained and maintenance conducted safely • Emergency operations controls, stability, lighting, marking and warnings, clear workspace
9.2	**Hand-held tools** • General considerations for selecting hand-held tools (whether powered or manual): > requirements for safe use > condition and fitness for use > suitability for purpose > locations to be used in (including flammable atmosphere) • Hazards of a range of hand-held tools (whether powered or manual) and how these hazards are controlled
9.3	**Machinery hazards and control measures** • Potential consequences as a result of contact with, or exposure to, mechanical or other hazards as identified in ISO 12100:2010 (Table B.1) • Hazards of a range of site equipment, including: strimmer; chainsaw; cement mixer; bench-mounted circular saw; compressor; plate compactor; ground consolidation equipment; road-marking equipment; electrical generators; unmanned aerial vehicles (UAV); driver-less vehicles • Control measures of the above equipment and the basic requirements for guards and safety devices
9.4	**Working near water** • Additional appropriate control measures when working near water (including buoyancy aids and safety boat)

Syllabus

Element 10: Electricity	
10.1	**Hazards and risks** • Risks of electricity: > electric shock and its effect on the body; factors that effect severity (voltage, frequency, duration, resistance, current path); electrical burns (from direct and indirect contact with an electrical source) > common causes of electrical fires, including portable devices overheating during charging > workplace electrical equipment including portable items: what is likely to lead to incidents* or electrical fires (unsuitable equipment; inadequate maintenance; use of defective/poorly maintained electrical equipment; use of electrical equipment in wet environments; overheating of portable equipment when charging) > secondary effects, including falls from height > work near overhead power lines and contact with underground power cables during excavation work
10.2	**Control measures** • Protection of conductors • Strength and capability of equipment • Advantages and limitations of protective systems: fuses, earthing, isolation of supply, double insulation, residual current devices, reduced and low voltage systems • Use of competent people • Use of safe systems of work (no live working unless no other option, isolation, locating buried services, protection against overhead cables) • Emergency procedures following an electrical incident • Inspection and maintenance strategies: user checks, formal inspection and tests of the electrical installation and equipment; frequency of inspection and testing; records of inspection and testing; advantages and limitations of in-service inspection and testing of electrical equipment

Syllabus

Element 10: Electricity	
10.3	**Control measures for working underneath or near overhead power lines** • How to prevent line contact incidents* through management, planning and consultation with relevant parties • Use of barriers to establish a safety zone when working near overhead lines with reference to the UK HSE's GS6 guidance document • Means of safely passing underneath overhead lines • Key emergency procedures if someone or something comes into contact with an overhead line
10.4	**Control measures for working near underground power cables** • Planning the work > the provision of pre-construction information • Using cable plans > obtaining and reviewing plans before any excavation work starts > what you should do if the information cannot be obtained > use of equipment for detecting/locating buried services • Safe digging practices • The use of appropriate tools, locating devices and route planning when undertaking excavation work, including vacuum, air and hydro excavation

Syllabus

Element 11: Fire	
11.1	**Fire principles** • The fire triangle: sources of ignition, fuel and oxygen in a construction workplace; oxidising materials • Classification of fires (diferent local classifications will be accepted) • Basic principles of heat transmission and fire spread; convection, conduction, radiation and direct burning • Common causes and consequences of fires within the construction industry
11.2	**Preventing fire and spread** • Control measures to minimise the risk of fire starting in a construction workplace: > eliminate/reduce quantities of flammable and combustible materials used or stored; storage of highly flammable materials > control ignition sources, including suitable electrical equipment in flammable atmospheres > use safe systems of work > good housekeeping > structural measures to prevent the spread of fire and smoke: properties of common building materials (including fire doors); compartmentation; protection of openings and voids
11.3	**Fire alarms and fire-fighting** • Common fire detection and alarm systems • Portable fire-fighting equipment: siting, maintenance and training requirements • Extinguishing media: water, foam, dry powder, carbon dioxide, wet chemical; advantages and limitations • Access for fire and rescue services and vehicles

Syllabus

Element 12: Chemical and biological agents	
12.1	**Hazardous substances** • Forms of chemical agent: dust, fibres, fumes, gases, mists, vapours and liquids • Forms of biological agents: fungi, bacteria, viruses • Health hazards classifications: acute toxicity; skin corrosion/irritation; serious eye damage/eye irritation; respiratory or skin sensitisation; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single and repeated exposure); aspiration hazard
12.2	**Assessment of health risks** • Routes of entry of hazardous substances into the body's defence mechanisms (superficial and cellular) • What needs to be taken into account when assessing health risks • Sources of information: > product labels > safety data sheets (who must provide them and information that they must contain) • Limitations of information used when assessing risks to health • Role and limitations of hazardous substance monitoring • Purpose of occupational exposure limits and how they are used
12.3	**Control measures** • The need to prevent exposure or, where this is not reasonable practicable, adequately control it • Principles of good practice used to control exposure to hazardous substances ("Ambient factors in the workplace" ILO Code of Practice, chapters 4.3 - 4.5) • Additional controls that are needed for substances that can cause cancer, asthma or genetic damage that can be passed from one generation to another

Syllabus

Element 12: Chemical and biological agents

12.4 Specific agents

- The prevalence of occupational lung disease, and occupational cancers among construction workers
- Proactively raising awareness of the risks to reduce incidence of occupational lung disease, and occupational cancers
- Health risks, controls and likely workplace activities/locations where the following specific agents can be found
  - > blood-borne viruses
  - > carbon monoxide
  - > cement
  - > *Legionella*
  - > *Leptospira*
  - > silica
  - > wood dust
  - > tetanus
- Good practice in the management of asbesos:
  - > asbestos identification (types of survey and who can undertake them, where it can be located)
  - > procedures following the identification of asbestos
  - > requirements if people are accidentally exposed to asbestos materials
  - > requirements for removal
  - > respiratory equipment, protective clothing, training, air monitoring and medical surveillance
  - > requirements for disposal (licenced carrier, notification, licenced disposal site)

Syllabus

Element 13: Physical and psychological health	
13.1	**Noise** • The physical and psychological effects of exposure to noise • The meaning of commonly used terms in the measurement of sound: sound pressure, intensity, frequency, the decibel scale, dB(A) and dB(C) • When exposure should be assessed; comparison of measurements to exposure limits established by recognised standards • Basic noise control measures including: isolation, absorption, insulation, damping and silencing; the purpose, application and limitations of personal hearing protection (types, selection, use, maintenance and attenuation factors) • Role of health surveillance
13.2	**Vibration** • The effects on the body of exposure to hand-arm vibration and whole body vibration • When exposure should be assessed; comparison of measurements to exposure limits established by recognised standards • Basic vibration control measures including: alternative methods of working (mechanisation where possible); low-vibration emission tools; selection of suitable equipment; maintenance programmes; limiting the time workers are exposed to vibration (use of rotas, planning work to avoid long periods of exposure); suitable PPE • Role of health surveillance
13.3	**Radiation** • The types of, and differences between, non-ionising and ionising radiation (including radon) and their health effects • Typical construction activities that could result in exposure to radiation including; the use of non-destructive testing • The basic ways of controlling exposures to non-ionising and ionising radiation • The role of the competent person in the workplace • The role of monitoring and health surveillance

Syllabus

Element 13: Physical and psychological health	
13.4	**Mental ill-health** • The frequency and extent of mental ill-health in the construction industry • Common signs of stress, depression; anxiety/panic attacks, post-traumatic stress disorder (PTSD) • The causes of, and controls for, work-related stress (see the UK HSE's Management Standards): > demands > control > support > relationships > role > change • Recognition that most people with mental ill-health can continue to work effectively
13.5	**Violence at work** • Types of violence at work including: physical, psychological, verbal, bullying and harassment • Effective management of violence at work
13.6	**Substance abuse at work** • Risks to health and safety from substance abuse at work (alcohol, legal/illegal drugs and solvents) • Managing substance abuse at work

***Use of the term 'incident'**
There are various terms that can be used interchangeably when referring to incidents. This includes accident (generally used when there has been actual harm/ill-health/damage caused) or near miss/close call (generally used when there has been the potential for harm/ill-health/damage to be caused but it did not actually occur in that instance).

NEBOSH has, therefore, adopted the approach taken in the 'Occupational health and safety management systems' (ISO 45001) standard in that an incident is: *An event that happens in the workplace that causes (or has the potential to cause) harm, injury, ill-health or damage.*

When the term 'incident' is used in an assessment, the context of the question and other supporting information will provide context for the term. For example, if a question in a scenario-based assessment is asking about the outcome of an incident, information will be provided in the scenario to give context. This could be something like 'the worker fell from a ladder and broke their leg'.

The term 'accident' may still occur in the syllabus if this is a recognised term or part of a title, eg, Reason's model of accident causation, accident incidence rates, etc.