



The NEBOSH Award in
**Environmental
Awareness at Work**

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NEBOSH, the National Examination Board in Occupational Safety and Health, one of the World's leading providers of Health, Safety and Environmental qualifications.



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Introduction

Introduction

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Element 1.2

Element 1.3

Element 2.1

Element 2.2

Element 2.3

Element 2.4

Element 2.5

Element 2.6

Element 2.7

This course book is designed to provide you with the basic knowledge you need to identify and deal with environmental issues in the workplace, so that you can help to develop a more sustainable workplace. It presents the core information required to achieve the NEBOSH Award in Environmental Awareness at Work, which is the perfect introductory qualification for those who need to be aware of environmental principles as part of their job.

Whether you intend to work through this course book alone or are using it as part of a taught course, you should find that it contains the essential knowledge you need to prepare for the formal NEBOSH assessment. This takes the form of a multiple-choice assessment.

The course book has been structured to match the NEBOSH syllabus, with the information divided into distinct elements, each of which starts with your learning outcomes for that particular section. If you have access to the Internet, we would recommend that you supplement this information by making use of additional resources, e.g. free leaflets and information from the UK Environment Agency (available to download from www.environment-agency.gov.uk) and guidance included on the United Nations Environment Programme website (www.unep.org). Other sources of information are available from the websites given in the References sections.

We are going to cover concepts that are fundamental to environmental awareness at work, such as sustainability, pollution, noise, waste and emergency situations. Throughout the course book we will focus primarily on practical environmental knowledge which will be equally applicable to any type of workplace. As you work through, you will notice that the examples included relate to all sorts of industries, e.g. energy supply, manufacturing, retail and construction. You are also expected to apply the principles you learn to familiar situations in your own workplace.

The course book is intended to be suitable for those working in the UK and international students working all over the world. Environmental management systems, controls and guidance which constitute best practice have been used as the basis, together with international standards and examples. Knowledge of specific legislation, either in the UK or in your own country, is not required and will not be included in the formal assessment.

We recommend that you spend a total of at least 10 hours studying for the NEBOSH Award in Environmental Awareness at Work. Details of how to take the formal assessment can be found on the NEBOSH website www.nebosh.org.uk, where you will also find additional information including a syllabus summary.

A GUIDE TO THE SYMBOLS USED IN THIS COURSE BOOK



ACTIVITY

These ask you to carry out an activity to reinforce what you have just read.



PAUSE FOR THOUGHT

These ask you to think about what you have been learning or to relate it to your own experience.



EXAMPLE

Real or imagined scenarios that give context to points made in the text.

1.0 Foundations of environmental awareness

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Element 1.1

Element 1.2

Element 1.3

Element 2.1

Element 2.2

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This element introduces you to key concepts that are fundamental to environmental awareness. You will learn about the components of the natural environment and the potential impact of human activities on them. Then we will consider the idea of sustainability and how organisations can manage their impacts on the environment using environmental management systems.

LEARNING OUTCOMES

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

- 1.1 Identify the meaning of: the environment; weather; climate; habitats; eco-systems; bio-diversity; pollution; sustainability
- 1.2 Identify the importance and benefits of sustainable development
- 1.3 Identify an environmental management system's main components and the certification process

1.1

The meaning of environment, habitats, eco-systems, pollution and sustainability

THE ENVIRONMENT

The environment is everything that surrounds us. This is clearly a very wide description! However, one of the fascinations of studying the environment is the breadth of topics and disciplines that are involved.

Take a moment to write down what makes up the environment around you. Then read on.



To start with, think about things that are very close to you, such as:

- the air you are breathing;
- the room or other space you are occupying;
- the people who are around you; and
- the things you can hear and smell.

Next you need to recognise whether you are in a town or city, or perhaps in the countryside.

- What are the characteristics of the region where you are based?
- What other living things, such as plants and animals, exist around you?

Thinking wider still, you need to be aware that we are all inhabitants of a single planet. Consequently, some of the things that are close to us, e.g. the air we breathe, are part of a global system.



So you can see that 'the environment' encompasses:

- the physical resources of the Earth including air, water, land and raw materials;
- the living resources of animal and plant life; and
- human populations.

It also includes how all of these things relate to each other.

When you consider the environment, you need to think locally, e.g. the immediate surroundings in which your organisation operates; regionally, e.g. the rivers, forests, coastal areas and other eco-systems within your country or continent; and globally, e.g. the oceans/seas which rivers flow into.


THE WEATHER

Our physical environment is constantly changing and one of the immediate ways in which we experience this is through the weather, but what do we mean by 'the weather'? The weather is all about what is happening to the Earth's atmosphere.

The atmosphere is a thin layer of gases – the 'air' – that surrounds our planet. This layer is really very thin. About 80% of the mass of the atmosphere exists within just 20km of the Earth's surface in a sub-layer called the 'troposphere'. If the Earth was the size of an orange, the troposphere would be no thicker than a layer of cling-film covering the surface of the orange!

Air in the troposphere is warmed by the Sun – but more so over the tropics than the polar regions. This causes differences in air pressure. The weather we experience (cloudy, sunny, rain, calm or stormy) is largely caused by these pressure differences (the 'barometric' pressure).

Air flows from areas of high to low pressure, creating winds. The moisture content of the air changes as these winds blow over oceans, land masses and mountain ranges.

 Air moving over warm oceans tends to become more moist. This moisture is likely to be deposited as rain as the air rises over colder land.

The weather is therefore a manifestation of how the atmosphere is behaving at any one time and place. People who study the weather describe this behaviour by measuring variables such as temperature, barometric pressure, moisture content, and wind strength.

THE CLIMATE

If the weather is what we feel at any particular moment, in terms of atmospheric temperature, pressure, rainfall and winds, then the climate is what we experience over a longer period. We expect it to be much wetter and warmer in the tropics than it is in the more temperate areas of Europe and North America. Measurements of weather variables are averaged over periods of 30 years or more. These measurements demonstrate that there are consistent differences in the weather likely to be experienced in different parts of the globe. Different regions are therefore said to have different climates, for example: arctic, temperate, desert, sub-tropical, tropical.

Global climates are generally very stable; however, when measured over millions of years the Earth has undergone some dramatic shifts in climate.

There have been four major ice-ages, the last of which came to an end about 10,000 years ago.

Measurements of the Earth's atmosphere over the last 150 years show that the temperature of the atmosphere has increased by around one degree Celsius. This may not sound much, but might be enough to trigger long-term changes in the weather.

Do you think that the weather is different now from when you were a child?

Such impressions are very subjective. Nevertheless, there is real concern that the atmosphere is being altered by emissions of 'greenhouse gases' such as carbon dioxide which comes from the burning of fossil fuels. Many people think that this is the reason for the global warming that we can measure now. If global warming were to trigger changes in the Earth's climate, this could potentially have very serious consequences.

The major agricultural areas of the Earth might produce less food.

HABITATS

Particular types of animals and plants live in particular localities. These localities provide them with all the physical and biological conditions they need to thrive.

Fish need to live in water. A marine fish, e.g. cod, cannot survive in a freshwater river and is only found in the sea.

So every living thing has a habitat – the place where it lives and where it can usually be found. Factors such as temperature, shelter, moisture, availability of oxygen and presence of food provide good conditions for survival and growth and are essential for a thriving habitat.

The following are examples of animals and their habitats.

- Although the cod is a marine fish, you won't find one in tropical seas, but only in colder northern waters. Here there are abundant smaller fish, squid, mussels and worms on which cod feed.
- Some animals and plants have very restricted habitats, e.g. giant pandas only live in particular forests where there is an abundance of bamboo.