

## Basic Principles in Occupational Hygiene

### Notes and Lesson Plans

#### Day 2

#### **Lesson plan: Section 6 – Measurement of Airborne Contaminants**

Aims: To give the students a basic understanding of concepts involved in the measurement of airborne contaminants.

Objectives:

- Introduce the states of matter/definitions
- Introduce the types of sampling
- Introduce the types of equipment
- Introduce calculations

Time (mins)	Activity	Resources
15	Explanation of the states of matter with students being questioned to give examples of each	PowerPoint Tutor provided props such as bottle of water or solvent
30	Lecture by tutor talking about the types of sampling	PowerPoint
30	Demonstration of Equipment by tutor ideally combined with lecture above.	Equipment supplied by tutor.
20	Calculation of personal exposure – one example included in spreadsheet. Tutor may wish to provide other. Tutor to assess student's maths abilities. Follow up with further calculations in next section	PowerPoint or Flipchart, calculators

## **Lesson plan: Section 7 – Hygiene Standards and Occupational Exposure Limits**

**Aims:** To Provide and an overview of the basic concepts including Occupational Exposure Limits, units of measurement, time-weighting, simple calculations/algebra. Standard setting.

**Objectives:**

- Introduce basic concepts; Occupational Exposure Limits, units of measurement, time-weighting, Standard setting.
- Sample Calculations to allow student to apply and manipulate formulae.

Time (mins)	Activity	Resources
60	Lecture by tutor explaining the concepts described in the course manual.	PowerPoint
45	Sample Calculations – allow students to work on their own with tutor moving between them to assist as and when required. Tutor may wish to provide others.  Tutor to assess student's ability to rearrange formulae.	PowerPoint or Flipchart, calculators

## **Lesson plan: Section 8 – Biological Monitoring and Health Surveillance**

Aims: To introduce the role of Biological Monitoring and Health.

Objectives:

- Introduce some common industrial processes/hazards.
- Illustrate the variety of industrial processes present.
- Illustrate the essential requirement of understanding an industrial process before any Anticipation, Recognition, Evaluation or Control can take place.

Time (mins)	Activity	Resources
10	Discussion with students as to whether they have experience of Biological monitoring either in work or private life – Discussion of elements such as breathalyzers, sports drug testing etc can help put the subject into context	PowerPoint
30	Lecture by tutor explaining the concepts described in the course manual.	PowerPoint

## **Lesson plan: Section 9 – General Approaches to Control of Risks to Health**

Aims: To provide the students with an understanding of the types of controls used for Health Risks as well as their relative merits.

Objectives:

- List the main types of Control Measures
- Explore the relative merits of these control measures

Time (mins)	Activity	Resources
30	Tutor Lead Discussion by students asking them to name types of control measures and sort them into a relative order/hierarchy. Asking students to justify their answers.	Flipchart, post it notes
20	Lecture by tutor to add in detail missed in class discussion	PowerPoint

## **Lesson plan: Section 10 – Ventilation**

Aims: To provide an understanding of the basic principles of general ventilation and Local Exhaust Ventilation.

Objectives:

- To explain the role of general ventilation
- To explain the components of an LEV system
- To explain the different types of Hoods and how They work
- To explain the concept of Capture Bubbles

Time (mins)	Activity	Resources
20	<p>Class discussion about the level of general ventilation within the teaching room. What the ventilation is for (controlling odours, temperature, humidity CO2 etc) and how good it is.</p> <p>Tutor to introduce concept of carrying out an activity within the room which involves the use of solvents e.g. cleaning of small components. Discuss with students what changes might be needed to the ventilation</p>	PowerPoint
60	Lecture by tutor describing components of LEV system, types of work	PowerPoint