

COURSE OVERVIEW HE1935
Industrial Hygiene Certification Program
BOHS-M501: Measurement of Hazardous Substances
(Including Risk Assessment)

(Accredited by the British Occupational Hygiene Society - BOHS)

Course Title

Industrial Hygiene Certification Program: BOHS-M501: Measurement of Hazardous Substances (Including Risk Assessment) *(Accredited by the British Occupational Hygiene Society - BOHS)*

Course Date/Venue

April 19-23, 2026/Boardroom 2, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference

HE1935

Course Duration

Five days/3.7 CEUs/37 PDHs

Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This course aims to provide an outline of the general approach advocated for the assessment of the health risk(s) associated with exposure to hazardous substances. It then focuses in detail on the role and application of atmospheric monitoring.

It addresses the theory of sampling, practical sampling and analytical considerations, and the calculation and presentation of results. Numerical calculations are included to ensure that the underlying principles are understood.

It also covers principles of occupational hygiene on the basis of anticipation, recognition, evaluation, and control of hazards that can be encountered in the workplace.

On completion of this course, participants will be able to:-

- Describe the general approach to health risk assessment, including the role of atmospheric monitoring
- Select appropriate equipment to measure specific airborne contaminants and devise a suitable sampling strategy
- Present the results in a form useful for health risk assessment purposes to enable management to comply with relevant legislation, but also, where appropriate, in a manner that is accessible to workers affected



This course is designed to provide participants with a detailed and up-to-date overview of Industrial Hygiene Certification Program: BOHS-M501: Measurement of Hazardous Substances (Including Risk Assessment). It covers the hazard and risk in terms of chemical or biological safety; the risk assessment process and information gathering; assessing risk and using risk assessments to decide on appropriate actions to protect worker health; recording risk assessment information in a useful form; the role of risk assessment in occupational health and safety management; and the workplace sampling strategies covering measurement methods, surveys, routine monitoring, interpretation of results, basic statistical analysis and quality assurance.

During this interactive course, participants will learn the survey design, personal sampling, area sampling and surface and other measurements; the nature of confined spaces hazards and techniques for assessing and monitoring confined spaces; the sampling pumps, sampling heads and filters and direct reading instruments; calibrating air sampling equipment and the analytical methods and detection limits, gravimetric analysis, microscopy and quality assurance of analysis; the commonly used international hygiene standards and its application; the biological monitoring and the role of measurement of metabolites in biological monitoring; and the numerical evaluations, interpretation and presentation of results.

This course will require at least 45 hours of study time, of which at least 37 hours will be taught (teaching and practical assessments) and 8 hours will be independent (in your own time).

Course Objectives

Upon the successful completion of this course, each participant will be able to:

- Achieve the OHTA Certificate in BOHS-M501: Measurement of Hazardous Substances (Including Risk Assessment)
- Define a hazard and risk in terms of chemical or biological safety and carryout risk assessment process and information gathering
- Assess risk and use risk assessments to decide on appropriate actions to protect worker health
- Record risk assessment information in a useful form and discuss the role of risk assessment in occupational health and safety management
- Carryout workplace sampling strategies covering measurement methods, surveys, routine monitoring, interpretation of results, basic statistical analysis and quality assurance
- Apply survey design, personal sampling, area sampling and surface and other measurements
- Identify the nature of confined spaces hazards and techniques for assessing and monitoring confined spaces
- Identify sampling pumps, sampling heads and filters and direct reading instruments
- Calibrate air sampling equipment and apply analytical methods and detection limits, gravimetric analysis, microscopy and quality assurance of analysis
- Recognize the commonly used international hygiene standards and its application
- Apply biological monitoring and discuss the role of measurement of metabolites in biological monitoring
- Carryout numerical evaluations, interpretation and presentation of results

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of hazardous substances measurement including risk assessment for technicians and technologists who conduct measurements and testing in workplaces.

Exam Eligibility & Structure

Before undertaking this course you are expected to be aware of the contents of the Control of Substances Hazardous to Health regulations (COSHH), HSE guidance HSG173 - Monitoring Strategies for Toxic Substances and HSE guidance MDHS14/4 - General Methods for Sampling and Gravimetric Analysis of Respirable, Thoracic and Inhalable Aerosols.

Training Fee

US\$ 7,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Exam Fee

US\$ 215 per Delegate + **VAT**.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Accommodation

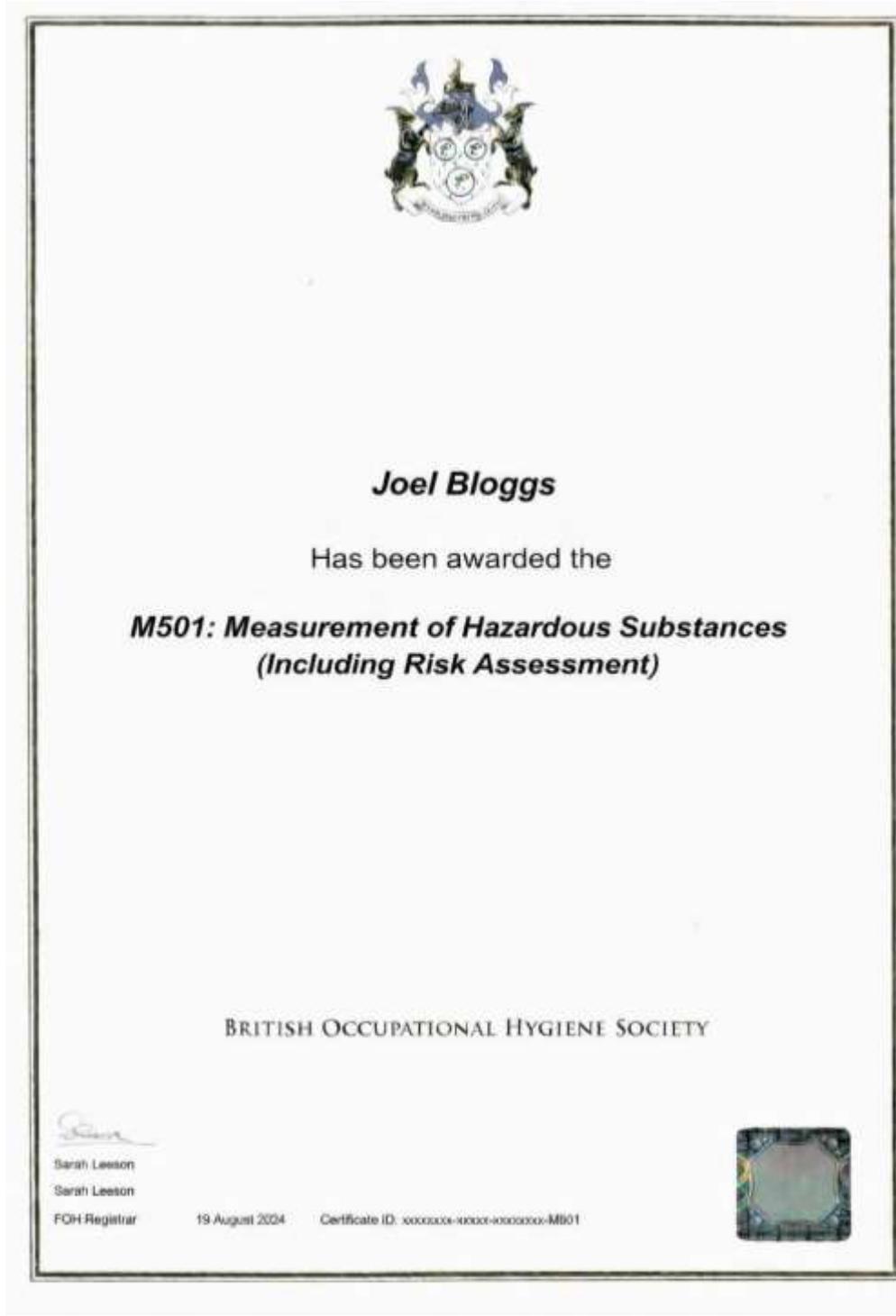
Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Certificate(s)

(1) BOHS-M501 – Measurement of Hazardous Substances (Including Risk Assessment) will be awarded to participants who have successfully completed the course and passed all the parts (A and B) within 12 months.

BOHS Certificate(s)

The following certificate is a sample of the BOHS certificates that will be issued to successful candidates:-





- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

Haward Technology Middle East
Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 15-Nov-23
HTME No. 74851
Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE1935	Industrial Hygiene Certification Program BOHS-M501: Measurement of Hazardous Substances (Including Risk Assessment) <i>(Accredited by the British Occupational Hygiene Society - BOHS)</i>	November 11-15, 2023	37	3.7

Total No. of CEU's Earned as of TOR Issuance Date **3.7**

TRUE COPY
J. Castillo
Jaryl Castillo
Academic Director

Haward Technology has been approved as an Accredited Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 608, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2018 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2018 Standard.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Association for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology is accredited by

PO. Box 26070, Abu Dhabi, United Arab Emirates | Tel.: +971 2 3091 714 | E-mail: info@haward.org | Website: www.haward.org



Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

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The British Occupational Hygiene Society (BOHS)

Haward Technology is an Approved Training Partner of the British Occupational Hygiene Society (BOHS) for the M201 and M500 series modules, which are designed to maintain a high standard of occupational hygiene education.

Together with BOHS, Haward Technology supports hygiene professionals in their mission to create safe working environments globally and is committed to advancing the practice of occupational hygiene to promote healthier workplaces worldwide.

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.7 CEUs** (Continuing Education Units) or **37 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Peter Jacobs, is a **Senior HSE Consultant** with over **25 years** of extensive experience within **Oil & Gas, Refinery** and **Petrochemical** industries. His wide experience covers in the areas of **OHTA Modules** (Measurement of Hazardous Substances, Thermal Environment, Noise Measurement & Its Effects, Asbestos & Other Fibers, Control of Hazardous Substances, Ergonomics Essentials, Health Effects of Hazardous Substances), Advanced **Industrial Hygiene, Incident Command & Report Writing, HAZOP, HAZMAT, HAZID, Health Risk**

Assessment, Modern Safety Risk Management, Process Risk Management, Root Cause Analysis Techniques, **HSE Management System** Development & Implementation, **SAESI Hazardous Materials** for the **First Responder Operations (NFPA 472), Industrial Safety & Housekeeping, Job Safety & Hazard Analysis, Hazardous Substances** Measurement, **Workplace** Control, Physical Agents, **Emergency Response, Chemical & Biological** Operations, **Basic Safety & Loss Prevention, Safety in Chemical Laboratory, Confined Space Safety, Industrial Hygiene, Occupational Health & Hygiene, Ergonomics, Biological** Assessment, **Radiation** with Radon/Thoron Assessment, **Radiation** Protection Safety, **Radiation** Monitoring, Natural **Radiation** Sources, **Nuclear** Regulatory Act, **Industrial Ventilation, Air Pollution Dispersion** Modelling, Basic **Clandestine Drug Laboratory** Investigation, **Chemical** Engineering, **Fire** Safety & Evacuation, **Evacuation** Safety, Safety Orientation, Hand & Power Tools Safety, Isokinetic Stack Sampling, Dust Exposure, Quantifying Workplace Stressors, Noise & Airborne Pollutants, Thermal Stress, Illumination, Mine Health & Safety, Statistical Method Validation, Legal Audit Compliance, Riot & Crowd Control, ISO 14000, OHSAS 18000, ISO 17025 and ISO 9000.

During his career life, Mr. Jacobs has gained his practical and field experiences through his various significant positions and dedication as the **Forensic Science Laboratory Manager, Occupational Hygienist, Radiation Protection Officer, Lead Practitioner, Safety, Health & Environmental (SHE) Specialist, First Responder, OHS Inspector, Ambulance Assistant** and **LPG Distributor Auditor** from various international companies like the Sedulitas, Richards Bay Minerals, Sasol and South African Police Service.

Mr. Jacobs has a **Master's** degree in **Public Health – Occupational Hygiene**, a **National Diploma in Purchasing Management** and an **Intermediate Certificate in Mine Environmental Control** an **Accredited South African Emergency Services Institute (SAESI)**. Further, he is a **Certified Instructor/Trainer**, an Appointed Commissioned Officer, a SAIOH/ IOHA President, an Assessor/Moderator of Health & Welfare SETA, a **Registered Occupational Hygienist** of the Southern African Institute for Occupational Hygiene, awarded as a SAIOH **Occupational Hygienist** of the Year Award and a well-regarded member of the British Occupational Hygiene Society (**BOHS**), Mine Ventilation Society of South Africa (MVSSA) and South African Radiological Protection Association (SARPA). He has further delivered numerous trainings, courses, seminars, workshops and conferences worldwide.



Day 2: Monday, 20th of April 2026

0730 – 0930	<p>Air Sampling Theory & Practice: Workplace Sampling Strategies Strategies - Understand What a Sampling Strategy is & Its Importance in Gaining Representative Results & be Aware of How the Choice of a Strategy May Affect the Measurement Results • Measurement Methods - Use Limits of Detection & Other Relevant Parameters to Select Appropriate Measurement Methods • Surveys - Understand the Different Types of Surveys & be Aware of How the Results from Various Surveys can be Used • Routine Monitoring - Understand the Role of Routine Monitoring & be Able to Plan Basic Routine Monitoring Programmes • Interpretation of Results - be Able to Interpret Results, Understand How Monitoring Strategy & Survey Type can Affect Results & be Able to Make Judgements About the Significance of Measurement Results • Basic Statistical Analysis - be Aware of How Statistical Principles can be Used to Plan Sampling Strategies & Evaluate Exposure Data • Quality Assurance - Understand the Importance of Quality Assurance in Surveys</p>
0930 - 0945	Break
0945 - 1100	<p>Air Sampling Theory & Practice: Survey Design Non-Sampling Approaches - Be Able to Apply Non-Sampling Approaches such as the ILO Chemical Control Toolkit or COSHH Essentials & Understand the Uses & Limitations of Such Approaches • Survey Design - To Understand the Effects of Survey Design on Measurement Results & be Able to Design Basic Surveys to Produce Representative Measurements (What, Who, Where, When, etc.) • Sample Numbers - Be Able to Calculate the Appropriate Number of Samples Required to Produce Representative Measurements & Understand the Basis of Statistically Representative Sampling • Grab Sampling - Understand the Use of & Limitations of Grab Sampling • Acute & Chronic Effects - Be Able to Design Sampling Strategies that are Appropriate for Different Types of Health Effects • 8 Hour Time-Weighted Average (TWA) & 15 Minute Short-Term Exposure Limit (STEL) Sampling - Understand the Significance of TWA & STEL Measurements, be Able to Adjust Measurements for Different Sampling Periods & be Able to Calculate TWA Results from Multiple Measurements</p>
1100 – 1230	<p>Air Sampling Theory & Practice: Personal Sampling Understand the Location of the Breathing Zone & Its Significance in Personal Sampling • Effect of Sample Head Location • Understand the Effect of Sample Head Location on the Sample Collected • Operator Variability • Understand the Reasons for the Differences in Exposure Measurement Between Operators</p>
1230 – 1330	Lunch
1330 - 1500	<p>Air Sampling Theory & Practice: Area Sampling Understand the Function & Limitations of Background Measurements • Understand the Effect of Particle Size & Physiochemical Properties on Contaminant Spread • Be Aware of the Techniques for Assessing the Quality of Breathing Air Supplied for Use in Air-Fed Respirators & Self-Contained Breathing Apparatus</p>
1500 - 1515	Break
1515 – 1600	<p>Air Sampling Theory & Practice: Surface & Other Measurements Be Aware of the Techniques & Uses of Surface Contamination Measurements • Be Aware of the Uses of In-Situ X-Ray Fluorescence (XRF) Metal Analysis • Be Aware of How Settlement Rates of Particulates can Affect their Dispersion • Understand the Role of Bulk Sampling in Determining the Nature of a Contaminant • Understand the Techniques for Assessing Skin Exposure</p>





1600 - 1620	Air Sampling Theory & Practice: Confined Spaces <i>Identification & the Nature of Confined Spaces Hazards • Be Aware of Where Confined Space Hazards Might Exist • Understand the Nature of such Hazards • Be Aware of the Techniques for Assessing & Monitoring Confined Spaces</i>
1620 - 1630	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1630	<i>End of Day Two</i>

Day 3: Tuesday, 21st of April 2026

0730 - 0930	Air Sampling Equipment: Sampling Pumps <i>Common Types of Pumps - Be Aware of the Different Types of Sampling Pump & their Uses • Fixed Volume Hand Pumps for Indicator Tubes - Understand the Correct Use of Fixed Volume Hand Pumps • Mechanism of Operation - be Aware of the Basic Operating Systems for Sampling Pumps • Intrinsic Safety of Sampling Equipment - Be Aware of the Need for Intrinsically Safe Sampling Pumps in Certain Environments</i>
0930 - 0945	Break
0945 - 1100	Air Sampling Equipment: Sampling Heads & Filters <i>Particulates - Understand the Techniques for Sampling of Common Particulates & the Use of Size Fractionation Techniques for Respirable Dusts • Sampling Heads - Be Aware of the Different Types of Sampling Heads & their Uses & Understand the Effect of the Filter Head on the Sample Collected • Filters - Be Aware of the Different Types of Filters, Understand the Use of Filters for Trapping Particulates & be Aware of the Use of Chemically Treated Filters for Sampling for Reactive Materials • Gases & Vapours - Understand the Use of Whole Air Sampling, the Use of Solvation for Trapping Gases & Vapours, the Use of Chemical Derivatisation for Sampling for Reactive Materials & the Use of Adsorption</i>
1100 - 1230	Air Sampling Equipment: Sampling Heads & Filters (cont'd) <i>Types of Adsorbents & Absorbents - Understand the Basic Principles of Adsorption, the Difference Between Adsorbents & Absorbents & be Aware of the Common Types of Adsorbents & their Uses • Colorimetric Tubes - Be Aware of the Operating Principle of Colorimetric Tubes, Understand the Correct Use of Colorimetric Tubes & be Aware of the Limitations of Colorimetric Tubes • Mixed Exposure to Solid/Liquid/Aerosol/Gases - Be Aware of the Techniques Available for Mixed Phase Sampling</i>
1230 - 1330	Lunch
1330 - 1430	Air Sampling Equipment: Sampling Heads & Filters (cont'd) <i>Sampling Trains - Understand How the Different Components of a Sampling System Connect to Form the Sampling Train & How the Sampling Train is Attached to the Worker • Collection Efficiency - Be Aware of the Collection Efficiency of Common Sampling Devices • Sample Stability - Be Aware of How to Minimise Sample Loss Between Sampling & Analysis • Diffusive ("Passive") Samplers - Understand the Basic Operating Principle of a Diffusive Sampler, be Aware of the Different Types of Diffusive Sampler & the Relative Advantages & Disadvantages of Diffusive Samplers</i>





0945 – 1230	Hygiene Standards <i>Principles of Calculation / Setting of Standards (Be Aware of How Hygiene Standards are Set) • Standards Used in Other Countries (Be Aware of Commonly Used International Hygiene Standards)</i>
1230 – 1330	Lunch
1330 – 1500	Hygiene Standards (cont'd) <i>Application of Standards (Understand How Exposure Measurements Relate to Hygiene Standards; Understand How Hygiene Standards are Used to Protect Worker Health) • Definitions, Terminology, Units (Understand the Terminology Commonly Used in Association with Standards; Understand the Relationship Between ppm & mg/m³ for Gases & Vapours)</i>
1500 – 1530	Break
1530 - 1620	Hygiene Standards (cont'd) <i>'Sk' & 'Sen' Notations (Understand the Meaning of the Skin Notation; Understand the Meaning of the Sensitiser Notation) • Problems (Be Aware of Situations that may Require Different Interpretation of Standards) • Limitations (Be Aware of the Limitations of Exposure Standards in the Light of this Background)</i>
1620 - 1630	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1630	End of Day Three

Day 5: Thursday, 23rd of April 2026

0730 – 0830	Biological Monitoring <i>Biological Monitoring - Be Aware of Common Methods of Biological Monitoring • Biological Effect Monitoring - Understand the Difference Between Biological Monitoring & Biological Effect Monitoring</i>
0830 - 0930	Biological Monitoring (cont'd) <i>Metabolites - Be Aware of the Role of Measurement of Metabolites in Biological Monitoring • Target Organs - Be Aware How the Target Organ may Affect the Choice of Monitoring Technique</i>
0930 - 0945	Break
0945 – 1100	Biological Monitoring (cont'd) <i>Local Action - Understand the Difference Between Local & Systemic Actions • Biological Half-Life - Understand the Significance of Biological Half-Life in Biological Monitoring & How this Impacts Timing of Sample Collection</i>
1100 – 1130	Biological Monitoring (cont'd) <i>Biological Monitoring Standards - Be Aware of the Sources of Biological Standards & Understand How They are Applied • Ethical Considerations - Be Aware of the Need for Informed Consent, Confidentiality & Data Protection Requirements</i>
1130 - 1215	Calculation, Interpretation & Presentation of Results: Numerical Evaluations <i>TWA Airborne Concentration - Be Able to Calculate TWA Values • Standardised Format - Be Able to Present Calculations in a Standardised Format</i>
1215 - 1315	Lunch
1315 – 1430	Calculation, Interpretation & Presentation of Results: Interpretation <i>Relevance of the Calculated Result - Understand the Significance of Exposure Measurements • Overall Accuracy - Be Aware of the Elements that Affect the Overall Accuracy of Measurements • Measurement Uncertainty Relating to Sampling & Analysis</i>



(B) Written Examination

This is an open-book examination comprising of 40 (160 marks) short-answer questions to be answered in 2 hours. Each question is worth 4 marks.

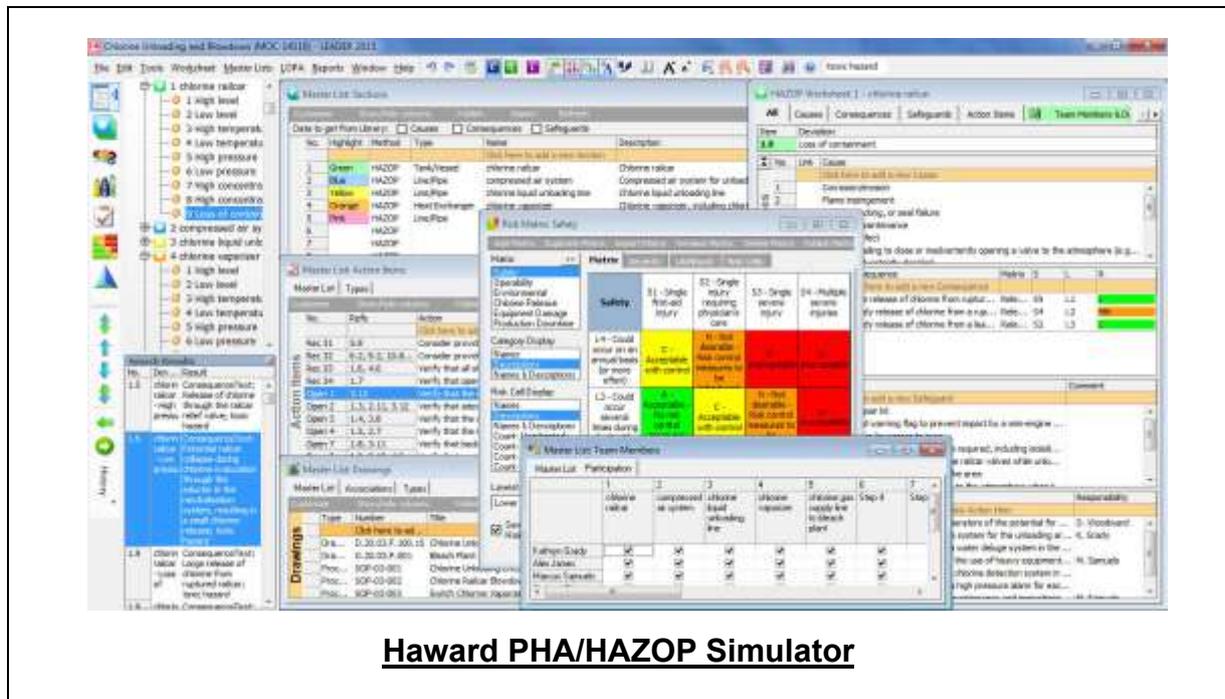
Questions may also include multiple answers and some questions may require calculations.

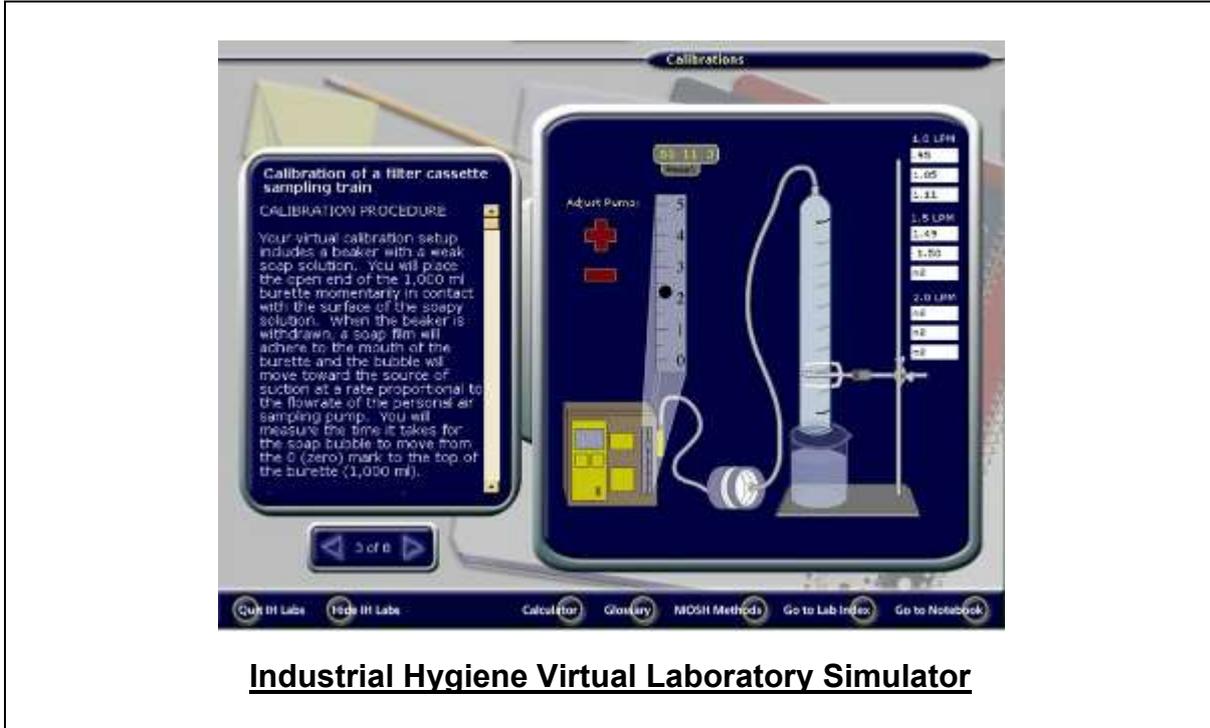
The examination covers all sections of the syllabus and is overseen by an invigilator.

The pass mark for this examination is 50%

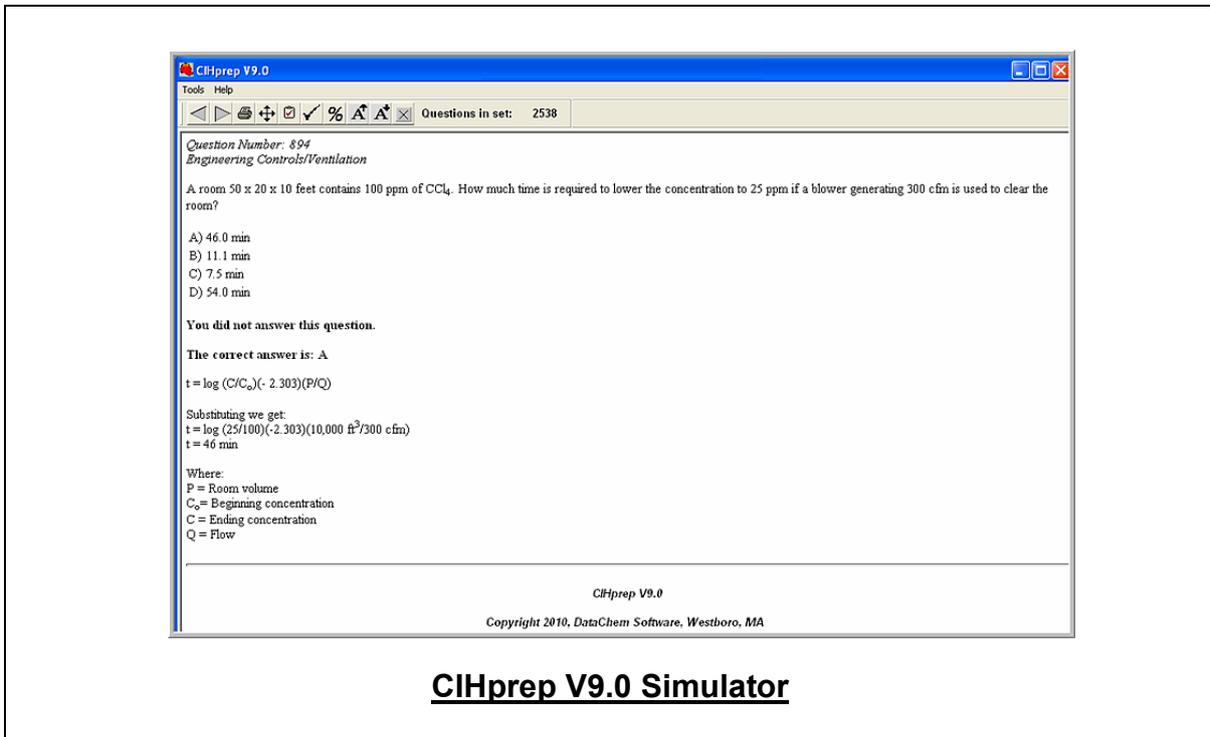
Simulators (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carry out various exercises using our state-of-the-art “Haward PHA/HAZOP”, “Industrial Hygiene Virtual Laboratory” and “CIHprep V9.0 ” simulators.





Industrial Hygiene Virtual Laboratory Simulator



CIHprep V9.0 Simulator

Course Coordinator

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