

**COURSE OVERVIEW HE0126**  
**Industrial Hygiene Certification Program**  
**W501: Measurement of Hazardous Substances**  
*(Accredited by OHTA-BOHS)*

**Course Title**

Industrial Hygiene Certification Program: W501: Measurement of Hazardous Substances  
*(Accredited by OHTA-BOHS)*

**Course Reference**

HE0126

**Course Duration**

Training: Five days/4.5 CEUs/45 PDHs  
 Exam: One day/3 Hours  
 Total: 6 Days



**Course Date/Venue**

Session(s)	Date	Venue
1	October 09-12 & 16, 2023	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
2	November 05-09, 2023	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
3	January 28-February 01, 2024	

**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.***

The aim of this course is to provide the participant with a sound understanding of the techniques for assessing exposure to hazardous substances in the workplace and with an understanding of how exposure information can be used to assess risk.



On completing this course successfully, the 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
- Presents the results in a form useful for health risk assessment purposes to enable management to comply with relevant legislation



The course is normally run as a 5-day taught course (minimum of 45 hours including lectures, tutorials, practical/demonstration sessions, guided reading, overnight questions and examinations). There will be a 40 short answer question “open book” examination with an allowed time of 120 minutes.

This course is designed to provide participants with a detailed and up-to-date overview of hazardous substances measurement. It covers the hazard and risk assessment process covering information gathering, assessing risk, actions, records and management; and the air sampling theory and practice including workplace sampling strategies, survey design, personal sampling, area sampling, surface and other measurements and confined spaces.

During this interactive course, participants will learn the air sampling equipment's comprising of pumps, sampling heads and filters, direct reading instruments and calibration of air sampling equipment; the sample analysis including trace level analytical methods, gravimetric analysis, microscopy and quality assurance of analysis and the hygiene standards and biological monitoring as well as calculation, interpretation, presentation of results.

### Course Objectives

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

- Achieve the OHTA-BOHS Certificate in W501: Measurement of Hazardous Substances
- Define hazard and risk and carryout risk assessment process covering information gathering, assessing risk, actions, records and management
- Employ air sampling theory and practice including workplace sampling strategies, survey design, personal sampling, area sampling, surface and other measurements and confined spaces
- Recognize air sampling equipments including comprising of pumps, sampling heads and filters, direct reading instruments and calibration of air sampling equipment
- Carryout sample analysis including trace level analytical methods, gravimetric analysis, microscopy and quality assurance of analysis
- Implement hygiene standards and biological monitoring as well as calculation, interpretation, 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, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.

### Who Should Attend

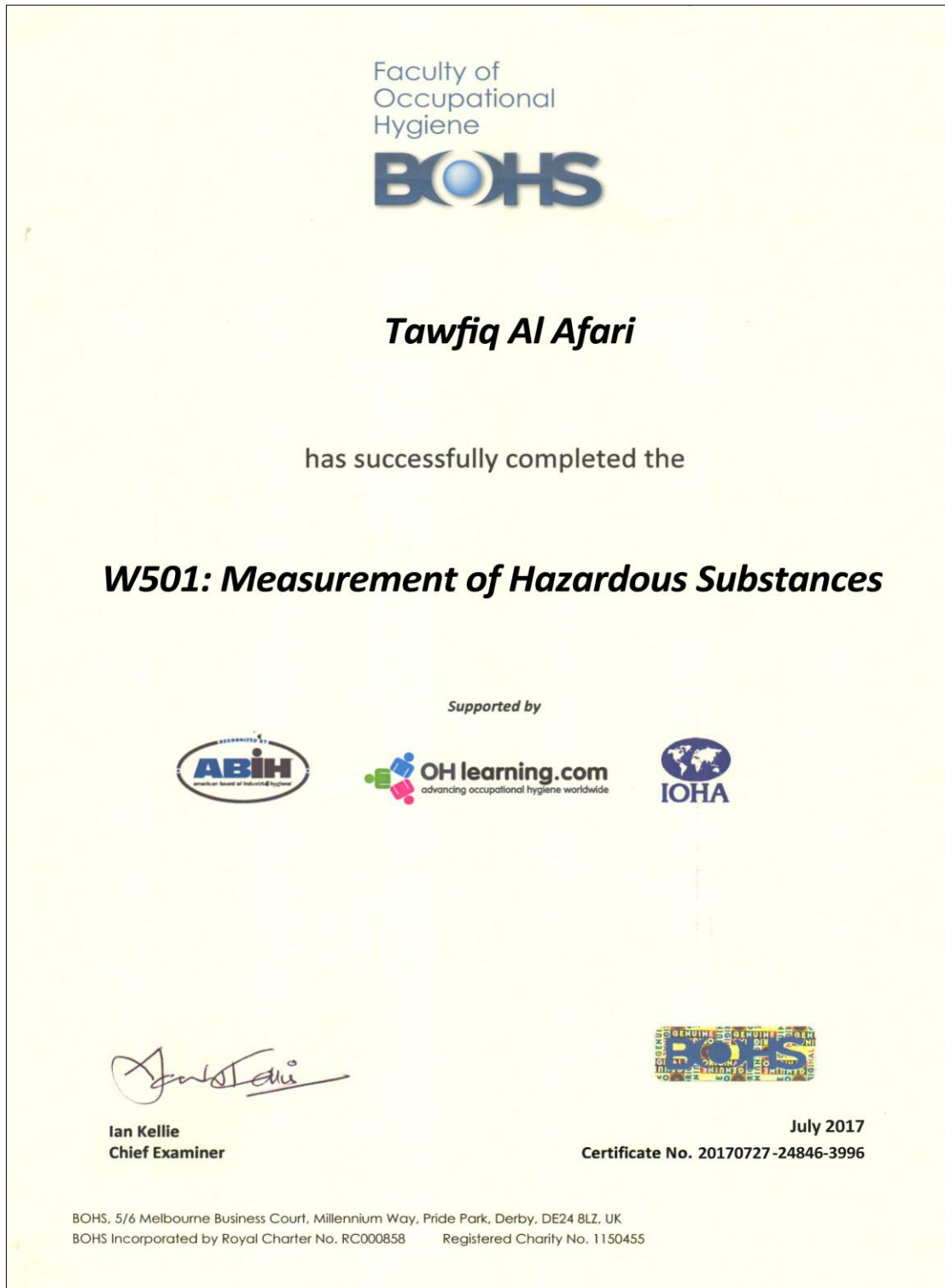
This course provides an overview of all significant aspects and considerations of hazardous substances measurement for health and safety professionals, occupational health specialists including physicians and nurses. Specialists in subjects such as acoustics, ergonomics, human factors, occupational psychology, work organisation, biosafety, engineering, analytical chemistry and those who want a broader appreciation of how their role interfaces with other professions over health issues in the workplace will find this course beneficial.

**Course Certificate(s)**

(1) BOHS Certificates will be issued to participants who have successfully completed the course and passed the exam of the course.

**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 \* CEUs \* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \*



**Haward Technology Middle East**

Continuing Professional Development (HTME-CPD)

CEUs

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## CEU Official Transcript of Records

**TOR Issuance Date:** 27-Jul-17

**HTME No.** PAR11317

**Participant Name:** Tawfiq Al Afari

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE126	<b>W501: Measurement of Hazardous Substances</b> (Accredited by OHTA-BOHS)	July 23-27, 2017	45	4.5

**Total No. of CEU's Earned as of TOR Issuance Date** **4.5**

**TRUE COPY**



**Maricel De Guzman**  
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 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 1-2013 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












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\* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \*

## Certificate Accreditations


Haward Technology is accredited by the following international accreditation organizations:-

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The British Occupational Hygiene Training Association (OHTA-BOHS)

Haward Technology is an OHTA Approved Training Provider under the W201 and W500 series modules that promote better standards of occupational hygiene practice throughout the world. OHTA is the British Occupational Hygiene Training Association.

Haward Technology supports hygiene professionals who wanted people around the world to enjoy the benefits of healthy working environments.


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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 **4.5 CEUs** (Continuing Education Units) or **45 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.

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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**. 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.

### 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 almost **25 years** of extensive experience within **Oil & Gas, Refinery and Petrochemical** industries. His wide experience covers in the areas of **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 held 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.



### Training Methodology

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Workshops & Work Presentations
- 30% Case Studies & Practical Exercises
- 20% Software, Simulators & Videos

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

### Course 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.

### Accommodation

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

### Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

#### **Day 1**

0730 – 0745	<i>Registration &amp; Coffee</i>
0745 – 0800	<i>Welcome &amp; Introduction</i>
0800 – 0815	<b>PRE-TEST</b>
0815 – 0930	<b>Risk Assessment: Definitions</b> <i>Hazard • Risk</i>
0930 – 0945	<i>Break</i>
0945 – 1200	<b>Risk Assessment: The Risk Assessment Process</b> <i>Information Gathering (Sources of Information, Significance of a Hazard from Toxicological Properties, Physiochemical Properties &amp; Other Data)</i>
1200 – 1230	<i>Lunch</i>
1230 – 1430	<b>Risk Assessment: The Risk Assessment Process (cont'd)</b> <i>Assessing Risk (The Relationship Between Risk, Hazard &amp; Exposure; Risk Based Upon the Possible Health Effects, Physiochemical Properties &amp; Use of a Hazardous Material; Probable Risk Based Upon Measurement Data)</i>
1430 – 1445	<i>Break</i>
1445 – 1720	<b>Risk Assessment: The Risk Assessment Process (cont'd)</b> <i>Actions (Use Risk Assessments to Decide on Appropriate Actions to Protect Worker Health) • Records (Record Risk Assessment Information in a Useful Form; Why it is Important to Record risk Assessment Information) • Management (The Role of Risk Assessment in Occupational Health &amp; Safety Management)</i>
1720 – 1730	<b>Recap</b>
1730	<i>End of Day One</i>

**Day 2**

0730 – 0930	<p><b>Air Sampling Theory &amp; Practice: Workplace Sampling Strategies</b>  <i>Strategies (What a Sampling Strategy is &amp; its Importance in Gaining Representative Results; How the Choice of a Strategy may Affect the Measurement Results?) • Surveys (Different Types of Surveys; How the Results from Different Types of Surveys can be Used) • Routine Monitoring (Role of Routine Monitoring, Plan Basic Routine Monitoring Programmes) • Interpretation of Results (How Monitoring Strategy &amp; Survey Type can Effect Results?; Significance of Measurement Results) • Basic Statistical Analysis (How Basic Statistical Tools can be Used to Help with the Interpretation of Measurement Results) • Quality Assurance(Importance of Quality Assurance in Surveys)</i></p>
0930 – 0945	Break
0945 – 1100	<p><b>Air Sampling Theory &amp; Practice: Survey Design</b>  <i>Non-Sampling Approaches (Apply Non-sampling Approaches such as the ILO Chemical Control Toolkit or COSHH Essentials; The Uses &amp; Limitations of such Approaches) • Survey Design (Effects of Survey Design on Measurement Results; Design Basic Surveys to Produce Representative Measurements (What, Who, When, When, Etc) • Sample Numbers (Calculate the Appropriate Number of Samples Required to Produce Representative Measurements; Basis of Statistically Representative Sampling) • Grab Samples (Use &amp; Limitations of Grab Sampling) • Acute &amp; Chronic Effects (Design Sampling Strategies that are Appropriate for Different Types of Health Effect) • 8 Hour TWA &amp; 15 minute STEL Sampling (Significance of TWA &amp; STEL Measurements; Adjust Measurements for Different Sampling Periods; Calculate TWA Results from Multiple Measurements)</i></p>
1100 – 1200	<p><b>Air Sampling Theory &amp; Practice: Personal Sampling</b>  <i>Breathing Zone (Location of the Breathing Zone &amp; its Significance in Personal Sampling) • Effect of Sample Head Location (Effect of Sample Head Location on the Sample Collected) • Operator Variability (Reasons for the Differences in Exposure Measurement Between Operators)</i></p>
1200 – 1230	Lunch
1230 – 1330	<p><b>Air Sampling Theory &amp; Practice: Area Sampling</b>  <i>General or Background Measurements (Function &amp; Limitations of Background Measurements) • Contaminant Spread (Effect of Particle Size &amp; Physiochemical Properties on Contaminant Spread) • Breathing Air Quality (Techniques for Assessing the Quality of Breathing Air Supplied for Use in Air-fed Respirators &amp; Self-Contained Breathing Apparatus)</i></p>
1330 – 1430	<p><b>Air Sampling Theory &amp; Practice: Surface &amp; Other Measurements</b>  <i>Surface Contamination Measurements (Techniques &amp; Uses of Surface Contamination Measurements • In-situ XRF Metal Analysis (Uses of In-situ XRF Metal Analysis) • Settlement of Contaminants (How Settlement Rates of Particulates can Affect their Dispersion) • Bulk Sampling (The Role of Bulk Sampling in Determining the Nature of a Contaminant) • Skin Exposure (The Techniques for Assessing Skin Exposure)</i></p>
1430 – 1445	Break
1445 – 1720	<p><b>Air Sampling Theory &amp; Practice: Confined Spaces</b>  <i>Identification &amp; the Nature of Confines Spaces Hazards (Where Confined Space Hazards Might Exist; Nature of Such Hazards) • Assessment Techniques (Techniques for Monitoring Confined Spaces)</i></p>
1720 – 1730	<b>Recap</b>
1730	End of Day Two



**Day 3**

0730 – 0930	<p><b>Air Sampling Equipment: Sampling Pumps</b>            Common Types of Pump (Different Types of Sampling Pump &amp; their Use) • Fixed Volume Hand Pumps For Indicator Tubes (Correct Use of Fixed Volume Hand Pumps) • Mechanism of Operation (Basic Operating Systems for Sampling Pumps) • Intrinsic Safety of Sampling Equipment (The Need for Intrinsically Safe Sampling Pumps in Certain Environments)</p>
0930 – 0945	Break
0945 – 1200	<p><b>Air Sampling Equipment: Sampling Heads &amp; Filters</b>            Particulates (Techniques for Sampling of Common Particulates; The Use of Size Fractionation Techniques for Respirable Dusts) • Sampling Heads (Different Types of Sampling Heads &amp; their Uses; Effect of the Filter Head on the Sample Collected) • Filters (Different Types of Filters; Use of Filters for Trapping Particulates; Use of Chemically Treated Filters for Sampling for Reactive Materials) • Gases &amp; Vapours (Use of Whole Air Sampling; Use of Solvation for Trapping Gases &amp; Vapours; Use of Chemical Derivatization for Sampling for Reactive Materials; Use of Adsorption) • Types of Adsorbent &amp; Absorbent (Basic Principles of Adsorption; The Difference Between Adsorbents &amp; Absorbents; Common Types of Adsorbents &amp; their Uses) • Colorimetric Tubes (Operating Principle of Colorimetric Tubes; Correct Use of Colorimetric Tubes) • Mixed Exposure to Solid/Liquid/Aerosol/Gases (Techniques Available for Mixed Phase Sampling) • Sampling Trains (How the Different Components of a Sampling System Connect Together to Form the Sampling Train; How the Sampling Train is Attached to the Worker?) • Collection Efficiency (Collection Efficiency of Common Sampling Devices) • Sample Stability (How Minimize Sample Loss Between Sampling &amp; Analysis) • Diffusive “Passive” Samplers (Basic Operating Principle of a Diffusive Sampler; Different Types of Diffusive Sampler; Relative Advantages &amp; Disadvantages of Diffusive Samplers)</p>
1200 – 1230	Lunch
1230 – 1430	<p><b>Air Sampling Equipment: Direct Reading Instruments</b>            Portable, Fixed-Site or Personal Devices (Operating Principles of Common Direct Reading Instruments; The Nature of the Information provided by Such Instruments) • Intrinsic Safety of Instruments (Need for the Use of Intrinsically Safety Instruments in Some Environments) • Real-Time Analysis (Uses of Real-time Measurements for Training &amp; Other Purposes) • Direct Reading Uses (Appropriate Use of Direct Reading Instruments &amp; their Limitations) • Instruments for Particulates (Common Types of Instruments Available for Direct Reading Measurements of Particulate Concentrations) • Instruments for Gases &amp; Vapours (Common Types of Instruments Available for Direct Reading Measurements of Particulate Concentrations)</p>
1430 – 1445	Break
1445 – 1720	<p><b>Air Sampling Equipment: Calibration of Air Sampling Equipment</b>            Flow Rate (Primary Standards – What Primary Standards are &amp; How they are Used in Flow Rate Calibration?; Secondary Standards – What Secondary Standards are &amp; How they are Used in Flow Rate Calibration?) • Known Concentrations (Standard Atmosphere Generalisation – Use Standard Atmospheres to Calibrate Direct Reading Equipment; Primary &amp; Secondary Standards – Difference Between Primary &amp; Secondary Standards)</p>
1720 – 1730	<b>Recap</b>
1730	End of Day Three

#### Day 4

0730 – 0800	<b>Sample Analysis: Trace Levels Analytical Methods</b> <i>Basic Techniques &amp; Applications (Analytical Techniques Used for Common Hazardous Substances) • Detection Limits, Sensitivity, Chemical Interferences (How Detection Limits &amp; Sensitivity of Such Techniques will Affect the Sample Volume Required?; How Chemical Interferences may Bias Results) • Sources of Methods (Sources of Standard Sampling &amp; Analysis Methods such as the NIOSH NMAM &amp; HSE MDHS Methods)</i>
0800 – 0830	<b>Sample Analysis: Gravimetric Analysis</b> <i>Weight Variation (Common Causes of Weight Variation &amp; How they can be Minimized?) • Instrument Sensitivity (The Level of Sensitivity of the Technique &amp; How this may Affect the Sample Size Required?) • Cost of Analysis (Relative Cost of Using this Technique) • Specificity (What this Type of Information this Type of Measurement Provides)</i>
0830 – 0900	<b>Sample Analysis: Microscopy</b> <i>Fibre Identification-Asbestos (Technique Used for the Measurement of Asbestos Fibre Concentrations)</i>
0900 – 0945	<b>Sample Analysis: Quality Assurance Analysis</b> <i>Internal Quality Control (The Importance of Internal Quality Control in Analysis) • External Quality Assessment (Function of External Quality Assessments Schemes in Improving Reliability of Laboratory Measurements)</i>
0945 – 1000	Break
1000 – 1200	<b>Hygiene Standards</b> <i>Principles of Calculation/Setting of Standards (How Hygiene Standards are Set? • Standards Used in Other Countries (Commonly Used International Hygiene Standards) • Applications of Standards (How Exposure Measurements Relate to Hygiene Standards?; How Hygiene Standards are Used to protect Worker Health)</i>
1200 – 1230	Lunch
1230 – 1430	<b>Hygiene Standards (cont'd)</b> <i>Definitions, Terminology, Units (Terminology Commonly Used in Association with Standards; The Relationship Between ppm &amp; mg m<sup>3</sup> for Gases &amp; Vapours • Sk', 'Sen' Notations (The Meaning of Skin Notation; The Meaning of the Sensitiser Notation)</i>
1430 – 1445	Break
1445 – 1720	<b>Hygiene Standards (cont'd)</b> <i>Problems (Situations that may Require Different Interpretation of Standards) • Limitations (Limitations of Exposure Standards in the Light of this Background)</i>
1720 – 1730	<b>Recap</b>
1730	End of Day Four

#### Day 5

0730 – 0930	<b>Biological Monitoring</b> <i>Biological Monitoring (Common Methods of Biological Monitoring) • Biological Effect Monitoring (The Difference Between Biological Monitoring &amp; Biological Effect Monitoring) • Metabolites (The Role of Measurement of Metabolites in Biological Monitoring) • Target Organs (How the Target Organ may Affect the Choice of Monitoring Technique?) • Local Action (Difference between Local &amp; Systemic Actions)</i>
0930 – 0945	Break

0945 - 1215	<b>Biological Monitoring (cont'd)</b> <i>Biological Half Life (The Significance of Biological Half-Life in Biological Monitoring • Sample Timing (How to Plan the Timing of Biological Sampling?) • Biological Standards (Sources of Biological Standards &amp; How they are Applied?) • Confidentiality (The Need of Confidentiality When Dealing with Biological Sampling Data)</i>
1215 - 1245	<i>Lunch</i>
1245 - 1415	<b>Calculations, Interpretation &amp; Presentation of Results: Numerical Evaluations</b> <i>Time-weighted Average Airborne Concentration (Calculate TWA Values) • Standardised Format (Present Calculations in a Standardised Format)</i>
1415 - 1515	<b>Calculations, Interpretation &amp; Presentation of Results: Interpretation</b> <i>Relevance of the Calculated Result (The Significance of Exposure Measurements) • Overall Accuracy (The Elements that Effect the Overall Accuracy of Measurements)</i>
1515 - 1530	<i>Break</i>
1530 - 1645	<b>Calculations, Interpretation &amp; Presentation of Results: Presentation of Results</b> <i>Relevant Information (Organize &amp; Present Data in Relevant Format) • Interpretation of Data (Provide Useful &amp; Appropriate Interpretation of Data) • Recommendations (Make Relevant &amp; Appropriate Recommendations based Upon Exposure Measurements)</i>
1645 - 1700	<b>Course Conclusion</b> <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1700 - 1715	<b>POST TEST</b>
1715 - 1730	<i>Presentation of Course Certificates</i>
1730	<i>End of Course</i>

### **MOCK Exam**

Upon the completion of the course, participants have to sit for a MOCK Examination similar to the exam of the Certification Body through Haward's Portal. Each participant will be given a username and password to log in Haward's Portal for the MOCK exam during the 7 days following the course completion. Each participant has only one trial for the MOCK exam within this 7-day examination window. Hence, you have to prepare yourself very well before starting your MOCK exam as this exam is a simulation to the one of the Certification Body.

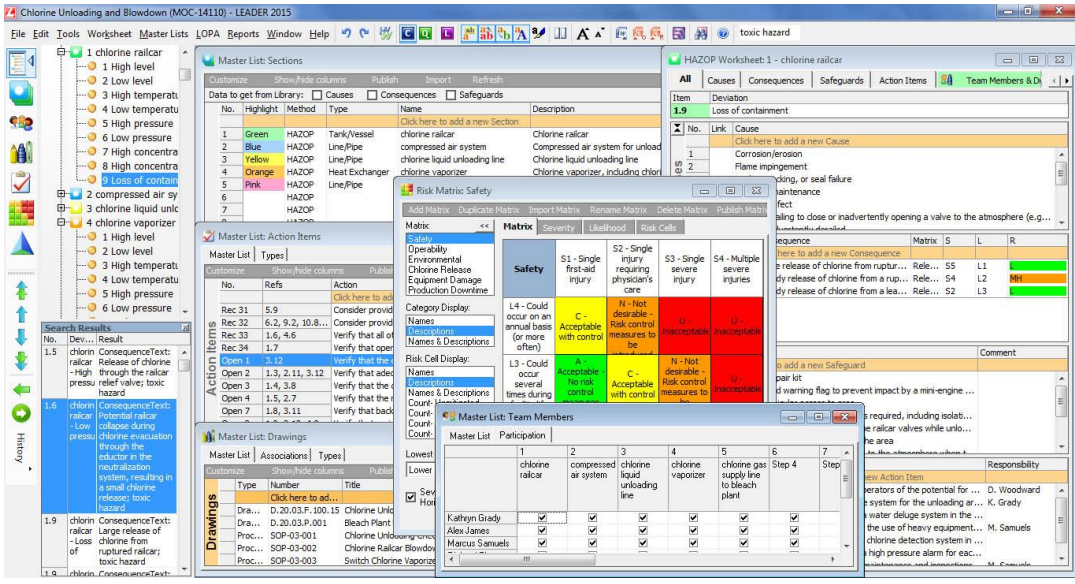
### **Day 6: OHTA BOHS Online Exam (to be scheduled within 30 days of course completion)**

0900 - 0915	<b>OHTA-BOHS Exam Registration/Briefing</b>
0915 - 1145	<b>OHTA-BOHS Exam</b>
1145 - 1200	<i>Closing Ceremony</i>
1200	<i>End of Exam</i>



## Simulator (Hands-on Practical Sessions)

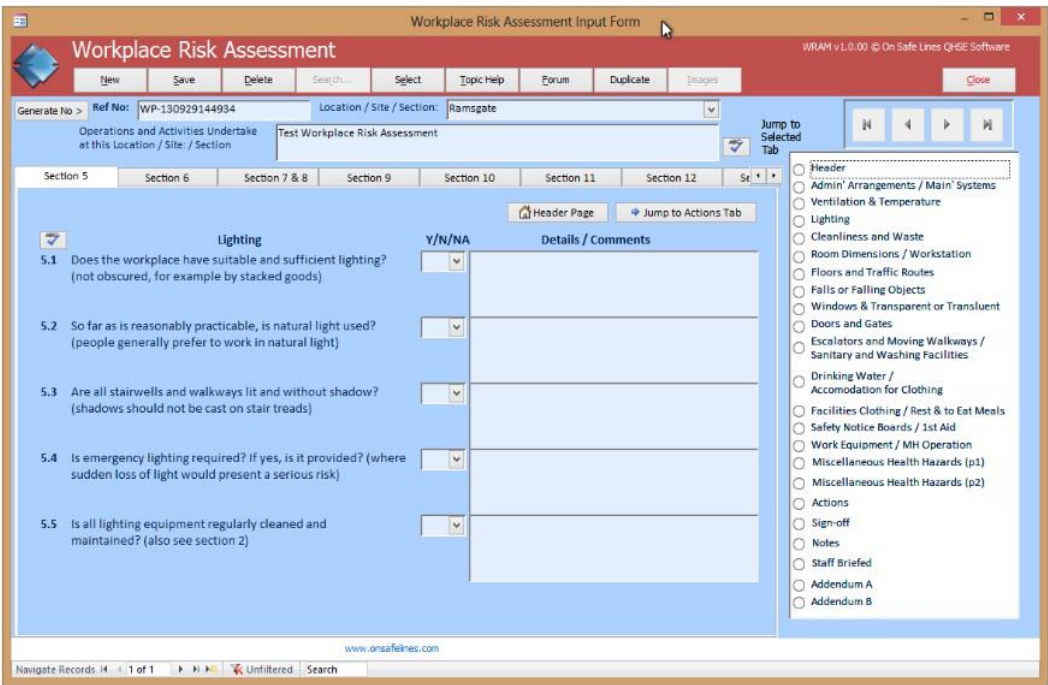
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art “PHA/HAZOP”, “Workplace Risk Assessment”, “Industrial Hygiene Virtual Laboratory” and “CIHprep V9.0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



The screenshot displays the PHA/HAZOP Simulator interface for a 'Chlorine Unloading and Blowdown' scenario. Key components include:

- Master List: Sections:** A table listing sections such as Tank/Vessel, Line/Pipe, and Heat Exchanger, each with a color-coded hazard level (Green, Blue, Yellow, Orange, Pink).
- Risk Matrix Safety:** A matrix with Severity (S1-S4) and Likelihood (L1-L4) axes, showing risk levels like 'Acceptable with control' or 'Not acceptable'.
- Master List: Team Members:** A participation table for team members like Kathryn Grady, Alex James, and Marcus Samuels across various steps of the process.
- HAZOP Worksheet:** A detailed view of a specific hazard (e.g., 'Loss of containment') with associated causes, consequences, and safeguards.

**PHA/HAZOP Simulator**

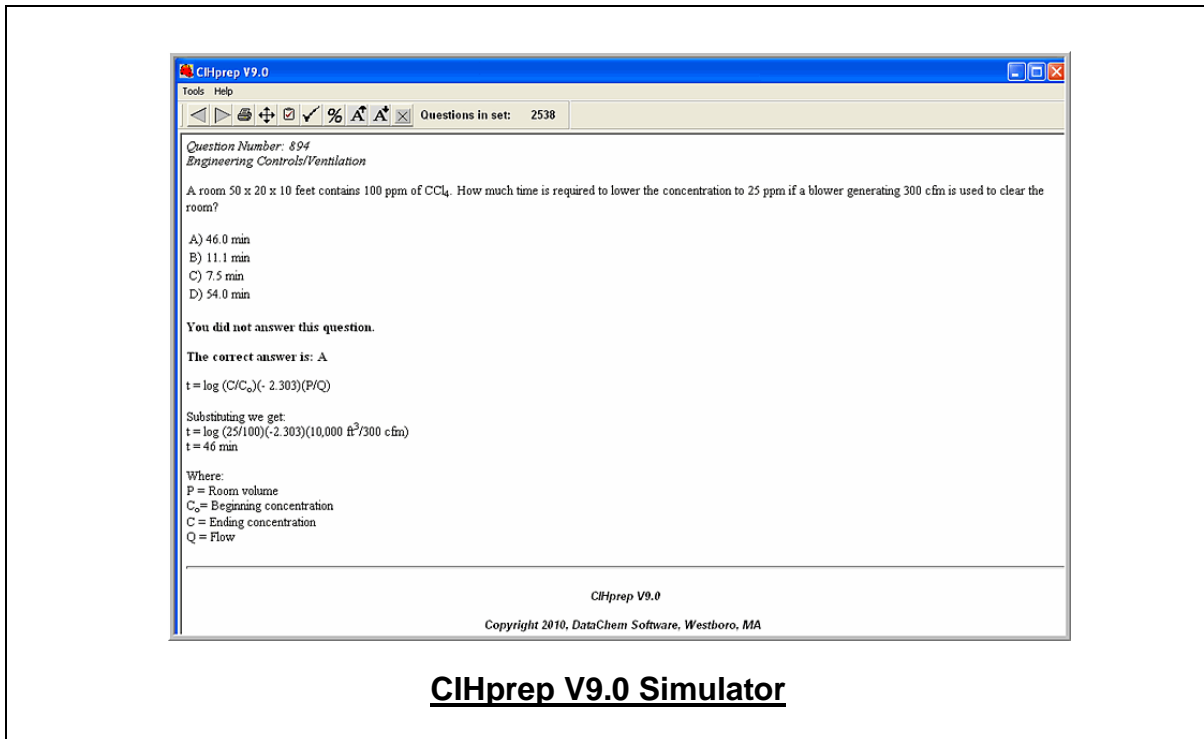
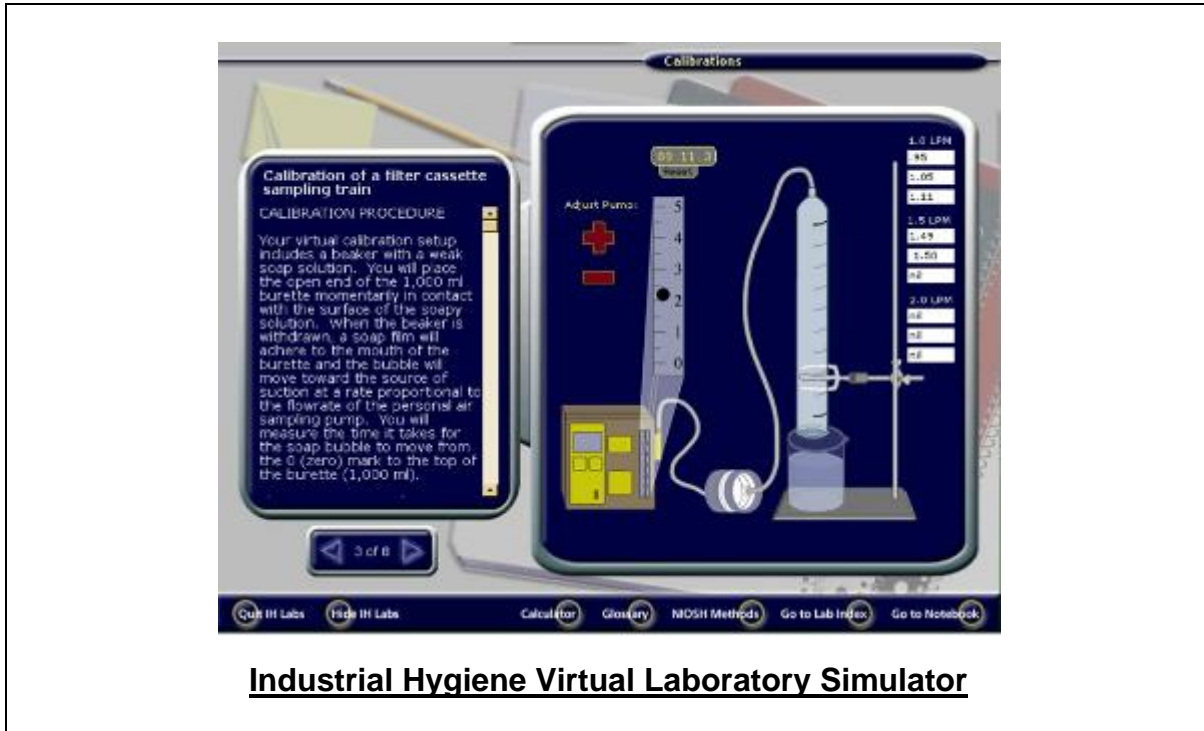


The screenshot shows the Workplace Risk Assessment (WRAM) software interface. It features a checklist of safety questions under the 'Lighting' category, such as:

- 5.1 Does the workplace have suitable and sufficient lighting? (not obscured, for example by stacked goods)
- 5.2 So far as is reasonably practicable, is natural light used? (people generally prefer to work in natural light)
- 5.3 Are all stairwells and walkways lit and without shadow? (shadows should not be cast on stair treads)
- 5.4 Is emergency lighting required? If yes, is it provided? (where sudden loss of light would present a serious risk)
- 5.5 Is all lighting equipment regularly cleaned and maintained? (also see section 2)

The interface includes a navigation menu on the right with categories like 'Admin' Arrangements / Main Systems, Ventilation & Temperature, Lighting, Cleanliness and Waste, etc.

**Workplace Risk Assessment**



**Course Coordinator**

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