COURSE OVERVIEW HE0127
Occupational Hygiene Certification Program
OHTA507: Health Effects of Hazardous Substances
(Accredited by the Occupational Hygiene Training Association - OHTA)

Course Title
Occupational Hygiene Certification Program: OHTA507: Health Effects of Hazardous Substances *(Accredited by the Occupational Hygiene Training Association - OHTA)*

Course Date/Venue
October 26-30, 2025/Slaysel 02 Meeting Room, Movenpick Hotel & Resort Al Bida'a Kuwait, City of Kuwait

Course Reference
HE0127

Course Duration
Five days/4.0 CEUs/40 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.

The course is a core module for the International Certificate in Occupational Hygiene (ICertOHTA). It is designed to be delivered as a 5-day taught programme including participant's assessment.

The aim of the course is :-

- Introduce you to toxicology, physiology and epidemiology
- Identify chemical substances hazardous to health at work and their harmful effects on target organs

On completing this course successfully, the participants will be able to :-

- Define commonly used toxicological terms
- Know the main routes by which hazardous substances can enter the body, and the factors which influence their absorption, distribution, storage and elimination
- Know where to find information on hazardous substances and processes
- Understand the principal target organs affected by hazardous substances at work, and the factors influencing harm
- Know the main routes of exposure and toxic and health effects for hazardous substances commonly encountered in the workplace
- Interpret results from epidemiological studies

This course is designed to provide participants with a detailed and up-to-date overview of OHTA507: Health Effects of Hazardous Substances. It covers the basic toxicological terms and concepts and the physical forms of hazardous substances; the types of health effects and basic human biology and target organs covering respiratory system, skin, nervous system, circulatory system, liver, kidney and reproductive system; basic toxicokinetics comprising of absorption, distribution and storage, metabolism and excretion; the dose-response curves and toxicity testing including allergy assessment methods in humans; and the epidemiology terms, types of epidemiological studies and health effects.

During this interactive course, participants will learn the gases, organic solvents and vapours and other selected organic liquids; the metals and metal compounds, dusts and particulate materials, mineral fibres and common industrial processes; the materials handling, machining, welding and thermal cutting, surface coating, treatment of metals, soldering, brazing, degreasing and painting; the smelting and refining of iron and steel, foundries, mining and quarrying; and the biological hazards covering legionella and humidifier fever, blood borne diseases, zoonoses, moulds, pandemics and genetic modification.

Course Objectives

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

- Achieve the OHTA Certificate in OHT507: Health Effects of Hazardous Substances
- Discuss some basic toxicological terms and concepts and the physical forms of hazardous substances
- Identify the types of health effects and the basic human biology and target organs covering respiratory system, skin, nervous system, circulatory system, liver, kidney and reproductive system
- Discuss basic toxicokinetics comprising of absorption, distribution and storage, metabolism and excretion
- Carryout dose-response curves and toxicity testing including allergy assessment methods in humans
- Define epidemiology terms, types of epidemiological studies and health effects
- Identify gases, organic solvents and vapours and other selected organic liquids
- Recognize metals and metal compounds, dusts and particulate materials, mineral fibres and common industrial processes
- Apply materials handling, machining, welding and thermal cutting, surface coating, treatment of metals, soldering, brazing, degreasing and painting
- Discuss smelting and refining of iron and steel, foundries, mining and quarrying
- Identify biological hazards covering legionella and humidifier fever, blood borne diseases, zoonoses, moulds, pandemics and genetic modification

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 covers deeper appreciation and wide understanding of health effects of hazardous substances 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.

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.

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$ 280 per Delegate + **VAT**.

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

OHTA Certificate(s)

The following certificate is a sample of the OHTA 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
HE0127	Occupational Hygiene Certification Program OHTA507: Health Effects of Hazardous Substances *(Accredited by the Occupational Hygiene Training Association - OHTA)*	November 11-15, 2023	40	4.0

Total No. of CEU's Earned as of TOR Issuance Date **4.0**

TRUE COPY

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 600, 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

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

Certificate Accreditations

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

- Occupational Hygiene Training Association (OHTA)

  Haward Technology is an Approved OHTA Trainer under the OHTA201 and OHTA500 series modules that promote better standards of occupational hygiene practice throughout the world.

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

- 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.

- 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 **3.0 CEUs** (Continuing Education Units) or **30 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 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 Clasndestine **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.

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: ***Sunday, 26th of October 2025***

0730 – 0745	*Registration & Coffee*
0745 – 0800	*Welcome & Introduction*
0800 – 0815	***PRE-TEST***
0815 – 0930	***Introduction to Toxicology*** *Introduction & Historical Perspective • Some Basic Toxicological Terms & Concepts (Acute & Chronic Effects, Local & Systemic Effects, Xenobiotic, Stochastic & Non-Stochastic, Types of Combined Effects, Limitations of Toxicity Testing Data) • Physical Forms of Hazardous Substances*
0930 – 0945	*Break*
0945 – 1230	***Types of Health Effects*** *Asphyxiation • Irritation • Narcosis • Systemic Toxicity*
1230 – 1330	*Lunch*
1330 – 1530	***Types of Health Effects (cont'd)*** *Genotoxicity & Carcinogenicity (Genotoxicity, Carcinogenicity, Benign & Malignant Tumours, Difficulties in Identifying Carcinogens, Classifications of Carcinogens) • Sensitisation - (Allergic Reaction) • Reproductive Effects*
1530 – 1545	*Break*
1545 – 1650	***Basic Human Biology & Target Organs*** *Respiratory System (Structure of the Respiratory System, Particle Deposition in the Respiratory System, Particle Size Fractions, Absorption of Gases & Vapours, the Lung as a Target Organ, Respiratory Sensitisation) • Skin (Structure & Function, the Skin as a Route of Entry & the Skin as a Target Organ)*
1650 – 1700	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today & Advise Them of the Topics to be Discussed Tomorrow*
1700	*End of Day One*

Day 2: ***Monday, 27th of October 2025***

0730 – 0930	***Basic Human Biology & Target Organs (cont'd)*** *Nervous System (Structure & Function & Nervous System as a Target Organ) • Circulatory System (Components & Function, Blood as a Target Organ) • Liver (Structure & Function, the Liver as a Target Organ)*
0930 – 0945	*Break*
0945 – 1230	***Basic Human Biology & Target Organs (cont'd)*** *Kidney (Structure & Function of the Kidney, Kidney as a Target Organ) • Reproductive System*
1230 – 1330	*Lunch*
1330 – 1530	***Basic Toxicokinetic*** *Absorption (Inhalation, Direct Contact (Skin or Dermal Absorption), Ingestion, Injection) • Distribution & Storage*
1530 – 1545	*Break*

1545 – 1650	***Basic Toxicokinetic (cont'd)*** *Metabolism (Biotransformation of Benzene, Biotransformation of Dichloromethane, Biotransformation of Methanol) • Excretion*
1650 – 1700	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today & Advise Them of the Topics to be Discussed Tomorrow*
1700	*End of Day Two*

Day 3: ***Tuesday, 28th of October 2025***

0730 – 0930	***Dose - Response Curves & Toxicity Testing*** *Introduction to Dose-Response Curves (No Observed Adverse Effect Level, Threshold, Slope of Curve)*
0930 - 0945	*Break*
0945 – 1230	***Dose - Response Curves & Toxicity Testing (cont'd)*** *Toxicity Testing (Types of Toxicity Testing, Toxicokinetic Studies, Acute Toxicity Studies, Sensitisation Studies, Repeated Dose Toxicity Studies, Genotoxity Studies, Reproductive & Developmental Toxicity Studies, Carcinogenicity Studies) • Allergy Assessment Methods in Humans (Lung Function Tests, Challenge Tests, Skin Prick Allergy Tests, Patch Testing, Serological Tests)*
1230 - 1330	*Lunch*
1330 – 1530	***Epidemiology*** *Introduction • Reasons for Undertaking Epidemiological Studies • Epidemiological Terms (Incidence & Prevalence Rates, Measures of Frequency, Causation or Association, Bias, Statistical Significance)*
1530 - 1545	*Break*
1545 - 1650	***Epidemiology (cont'd)*** *Types of Epidemiological Studies (Longitudinal Studies, Cross-Sectional Studies)*
1650 – 1700	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today & Advise Them of the Topics to be Discussed Tomorrow*
1700	*End of Day Three*

Day 4: ***Wednesday, 29th of October 2025***

0730 – 0930	***Overview of Health Effects*** *Introduction • Gases (Introduction, Simple Asphyxiants, Chemical Asphyxiants, Respiratory Tract Irritants, Other Gases) • Organic Solvents & Vapours (Introduction, Exposure to Organic Solvents, General Health Effects, Specific Information for Selected Organic Solvents) • Other Selected Organic Liquids (Styrene, Isocyanates)*
0930 - 0945	*Break*
0945 - 1230	***Overview of Health Effects (cont'd)*** *Metals and Metal Compounds (Aluminium (Al), Arsenic and its inorganic salts (As), Beryllium (Be), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), Vanadium (V), Zinc (Zn)) • Dusts and Particulate Materials (Crystalline Silica, Nanoparticles, Diesel Engine Exhaust, Latex, Enzymes, Flour and other Food Components) • Mineral Fibres (Asbestos; Machine Made Mineral Fibres (MMMF))*

1230 - 1330	Lunch
1330 – 1530	***Common Industrial Processes*** *Introduction • Materials Handling (Handling of Solids and Powders; Handling of Liquids) • Working with Metals (Grinding, Machining of Metals, Welding and Thermal Cutting) • Surface Coating and Treatment of Metals (Electroplating and Galvanizing)*
1530 - 1545	Break
1545 – 1650	***Common Industrial Processes (cont'd)*** *Soldering and Brazing • Degreasing (Cold Degreasing, Vapour Degreasing) • Painting (Exposure to Solvents in Painting)*
1650 – 1700	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today & Advise Them of the Topics to be Discussed Tomorrow*
1700	*End of Day Four*

Day 5: Thursday, 30th of October 2025

0730 – 0930	***Specific Industry Profiles*** *Introduction • Smelting & Refining of Iron and Steel (Chemical Hazards of Smelting and Refining, Other Industrial Hygiene Hazards of Smelting and Refining) • Foundries (Iron Foundries, Other Foundries)*
0930 – 0945	Break
0945 – 1230	***Specific Industry Profiles (cont'd)*** *Mining and Quarrying (Airborne Particulate Hazards, Other Hazards) • Oil and Petroleum Industry (Petroleum Refining) • Pharmaceutical Industry*
1230 – 1330	Lunch
1330 – 1530	***Regulatory Considerations*** *Risk and Safety Phrases • Sources of Information (Safety Data Sheets (SDS), Literature, Reach (Registration, Evaluation, Authorisation and Restriction of Chemicals Regulations)*
1530 – 1545	Break
1545 – 1615	***Biological Hazards*** *Introduction To Biological Hazards • Legionella and Humidifier Fever (Legionella, Humidifier Fever) • Blood Borne Diseases (Hepatitis B, Hepatitis C, HIV - (Human Immuno-Deficiency Virus)) • Zoonoses (Anthrax (ACDP Group 3), Leptospirosis (Hazard Group 2), Salmonellosis) • Moulds • Pandemics • Genetic Modification*
1615 – 1630	***Course Conclusion***
1630 – 1645	***POST-TEST***
1645 – 1700	*Presentation of Course Certificates*
1700	*End of Course*

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

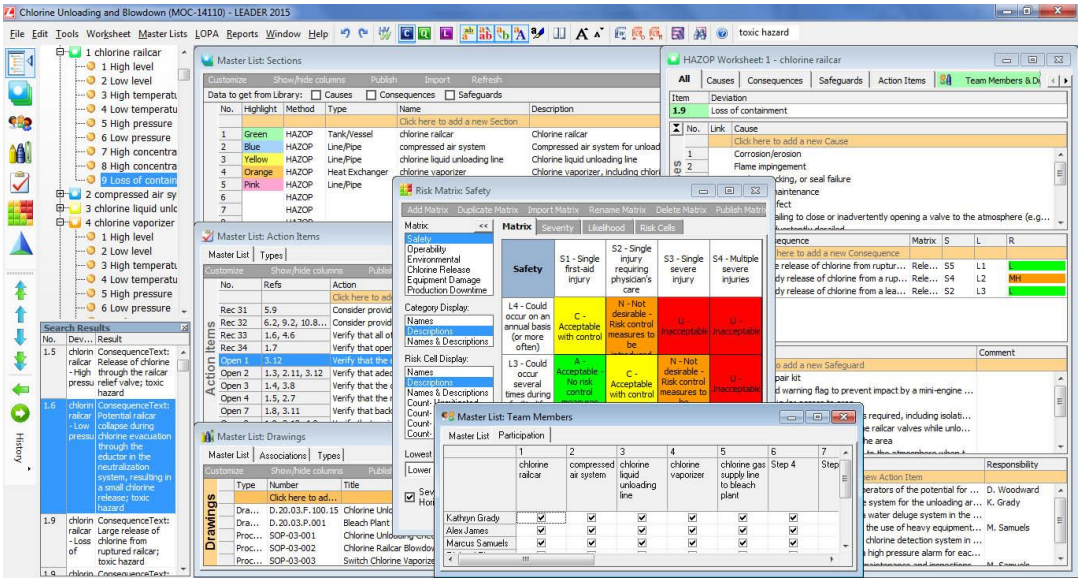
0900 – 0915	***OHTA-BOHS Exam Registration/Briefing***
0915 – 1145	***OHTA-BOHS Exam***
1145 – 1200	*Closing Ceremony*
1200	*End of Exam*

MOCK Exam

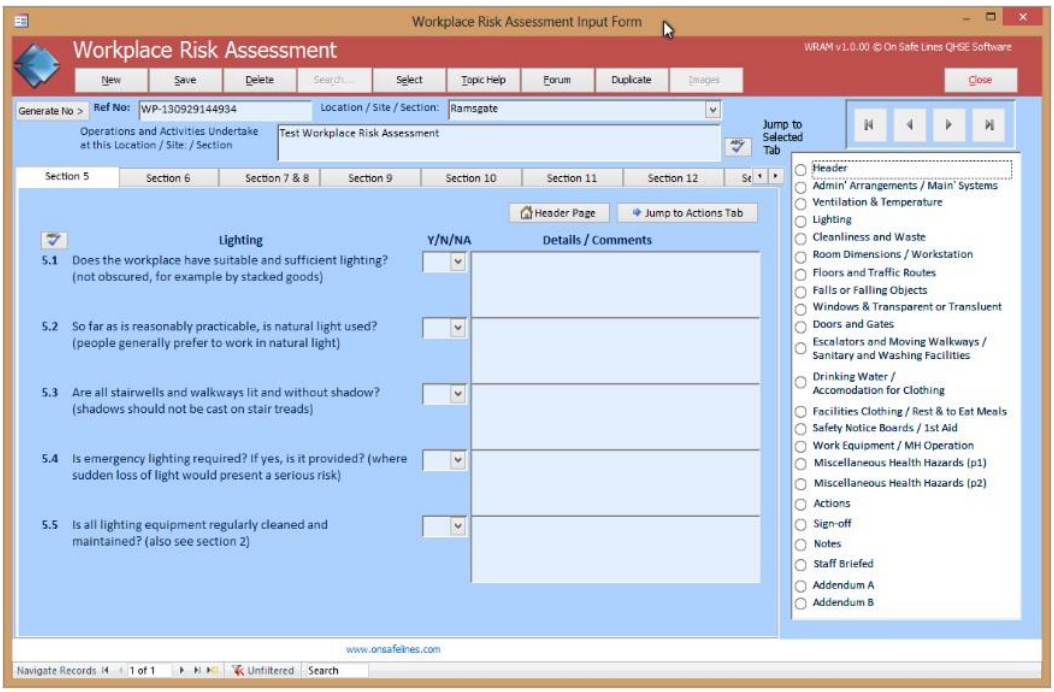
Upon the completion of the course, participants have to sit for a MOCK Examination similar to the exam of the Certification Body through Haward's Portal. Each participant will be given a username and password to log in Haward's Portal for the MOCK exam during the 30 days following the course completion. Each participant has only one trial for the MOCK exam within this 30-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.

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.

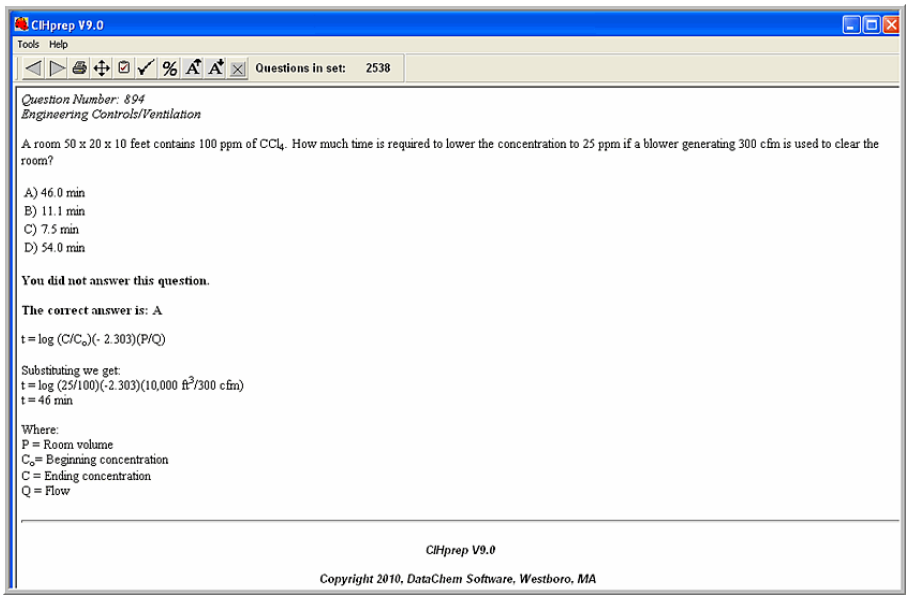


PHA/HAZOP Simulator



Workplace Risk Assessment

Industrial Hygiene Virtual Laboratory Simulator



CIHprep V9.0 Simulator

Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org