



COURSE OVERVIEW HE0127 Occupational Hygiene Certification Program

Course Title

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

Course Date/Venue

Option 1: February 23-27, 2025 or, Option 2: April 27- May 01, 2025 or, Option 3: November 02-06, 2025

Venue: TBA Meeting Room, City Center Rotana Doha,

Doha, Qatar



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 hazardous substances commonly for encountered in the workplace
- Interpret results from epidemiological studies

















(Accredited by the Occupational Hygiene Training Association - OHTA)

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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\$ 8,000 per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Exam Fee

US\$ 200 per Delegate.

<u>Accommodation</u>

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:-



Awarded by the Occupational Hygiene Training Association

Mohammed AL Ali

has successfully completed the course

OHTA507 Health Effects of Hazardous Substances

Chris Laszcz-Davis & Stephen Verpaele

Co-Chairs, OHTA Board

Issued: 23 March 2024

Haward Technology
Middle East

Training provided by Haward

Certificate No.: 11138

Supported by



OHTA, Registered UK Charity No. 1168722 www.ohtatraining.org

















(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



















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 **4.0 CEUs** (Continuing Education Units) or **40 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. Steve Angele, MSc, BSc, BSOH, AIHA, is a Senior HSE & Industrial Hygiene Consultant with 25 years of extensive experience within Oil & Gas, Refinery and Petroleum industries. His wide experience covers in the areas of Occupational Health, Safety & Industrial Hygiene, Industrial Hygiene W5 Series, Occupational Health Management, Safety & Industrial Hygiene, Occupational Health & Safety Practices, Industrial Hygiene Management Systems, Health Risk Assessment, Environmental

Resources Management (ERM), **Emergency** Response, Sustainability Environmental Awareness, Environmental Management, Environmental Pollution, Environmental Emergency Plan, Environmental Management, Environmental Impact & Life Cycle Assessments, HAZOP, HAZMAT, HAZID, Modern Safety Risk Management, Process Hazard Analysis (PHA), Process Risk Management, Root Cause Analysis (RCA), HSE Management System Development & Implementation, Lab Chemicals Handling & Storage, Hazardous Materials, Industrial Safety & Housekeeping, Job Safety Analysis (JSA), Hazardous Substances Measurement, Workplace Control, Physical Agents, Safety & Loss Prevention, Safety in Chemical Laboratory, Confined Space Safety, Ergonomics, HSSE Management Tools & Techniques, HSSE Practices, Security Operating System, Emergency Response & Crisis Management, Behavioural Based Safety (BBS), Safety Observation & Conversation, Corporate Social Responsibility (CSR), Sustainability Principles & Practices, Root Cause Analysis & Prevention, Root Cause Analysis Techniques & Methodologies, Accident/Incident & Condition Reporting & Investigation, Incident Command & Report Writing and Near Miss Reporting. He is currently the President & CEO of Belgian Center of Occupational Hygiene (BeCOH) wherein his responsibilities focused on leadership, governance and promoting occupational hygiene and safety.

During his career life, Mr. Angele has gained his practical and field experiences through his various significant positions and dedication as the **Industrial Hygienist**, **Industrial Hygiene Manager**, **Occupational Hygienist**, **Head** of the **Section Environmental Analysis**, **Occupational Hygiene Consultant**, **ANSES Expert**, **Research Assistant Laboratory**, **Voluntary Worker** and **Senior Instructor/Trainer** from various international companies such as the University of College Gent, Mensura EDPBW, GT Silice Cristalline & GT Metrologie and Nickel Institute, just to name a few.

Mr. Angele has Master and Bachelor degrees in Environmental Chemistry from the University of Ghent, Belgium, a Bachelor's degree (Cum Laude) in Chemistry from the Hogeschool Gent, Belgium. Further, he holds certificates in Specialization Occupational Hygiene and Multidisciplinary Basic Information Prevention & Protection at Work, a Certified Instructor/Trainer, an active Member of the Board of Directors in Occupational Hygiene Training Association (OHTA), International Commission on Occupational Health (ICOH), Belgian Society of Occupational Hygiene (BSOH) and Workplace Health without Borders (WHWB) and a Committee Member of AIHA Sampling and Laboratory Analysis. Moreover, he has published and authored several academic papers, research and journals and 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:

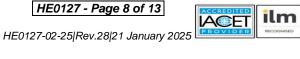
Day 1

Day 1	
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) Recap
1650 – 1700	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

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

Day 3	
0730 - 0930	Dose - Response Curves & Toxicity Testing
	Introduction to Dose-Response Curves (No Observed Adverse Effect Level,
	Threshold, Slope of Curve)
0930 - 0945	Break
	Dose - Response Curves & Toxicity Testing (cont'd)
	Toxicity Testing (Types of Toxicity Testing, Toxicokinetic Studies, Acute
	Toxicity Studies, Sensitisation Studies, Repeated Dose Toxicity Studies,
0945 – 1230	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
1230 - 1330	
	Epidemiology
1330 - 1530	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

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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

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Day 5	
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
	Regulatory Considerations
1330 - 1530	Risk and Safety Phrases • Sources of Information (Safety Data Sheets (SDS),
	Literature, Reach (Registration, Evaluation, Authorisation and Restriction of Chemicals Regulations)
1530 - 1545	Break
	Biological Hazards
	Introduction To Biological Hazards • Legionella and Humidifier Fever
1545 – 1615	(Legionella, Humidifier Fever) • Blood Borne Diseases (Hepatitis B, Hepatitis
1010 1010	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
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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.

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

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



















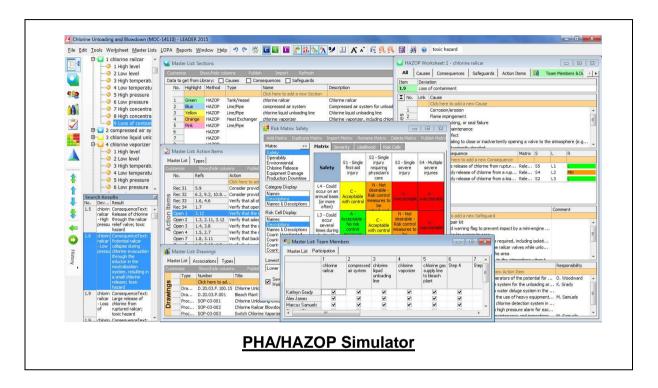






Simulator (Hands-on Practical Sessions)

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.





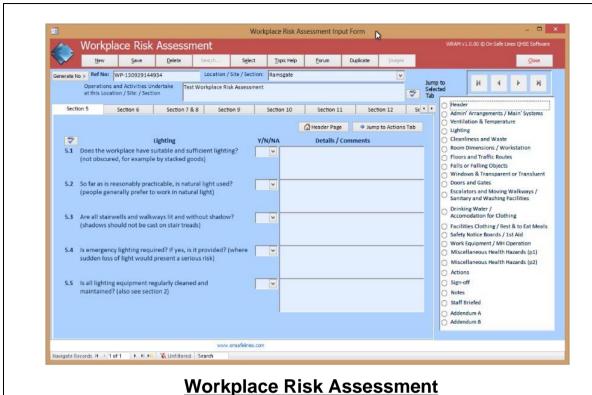


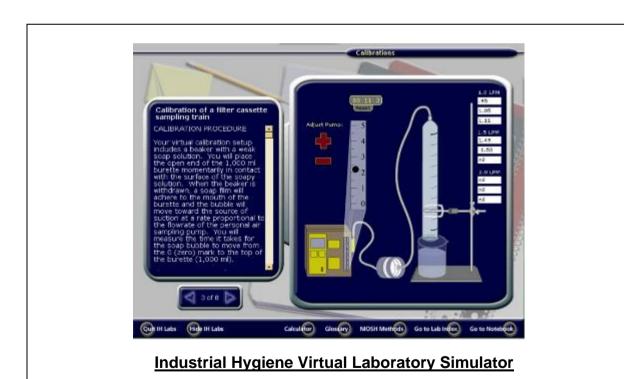
















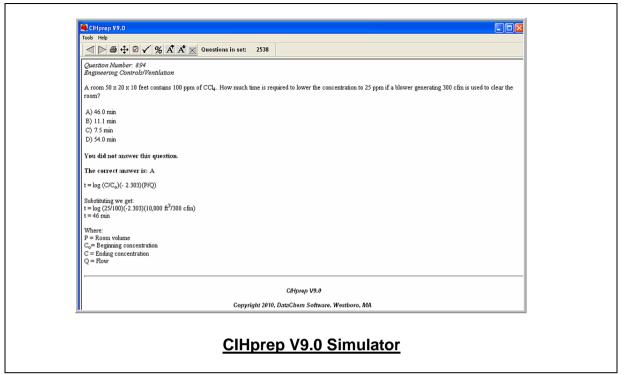












Course Coordinator

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