

COURSE OVERVIEW HE0570

Laboratory Fume Hood Safety and Maintenance

Course Title

Laboratory Fume Hood Safety and Maintenance

Course Date/Venue

Session 1: April 06-10, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Session 2: August 18-22, 2025/ Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

HE0570



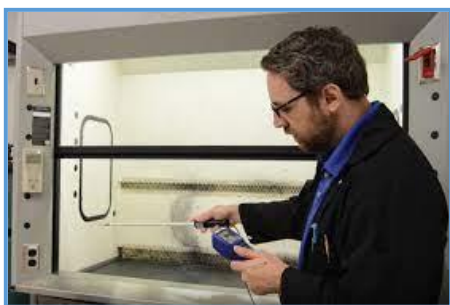
Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.



This course is designed to provide participants with a detailed and up-to-date overview of Laboratory Fume Hood Safety and Maintenance. It covers the importance, types and components of laboratory fume hoods; the basic principles of fume hood operation, laboratory layout and fume hood placement and regulatory and compliance standards; the pre-operational checks, safe handling of hazardous materials and fume hood work practices; the common fume hood errors and risks and proper personal protective equipment (PPE); and the emergency procedures, routine cleaning and maintenance, filter inspection and replacement.



During this interactive course, participants will learn the airflow testing and monitoring and preventive maintenance schedule; addressing the common maintenance issues and contractor and vendor management; the acid digestion hoods, perchloric acid hoods, radioisotope hoods and high-performance and energy-efficient fume hoods; the energy efficiency in fume hoods, fume hood performance failures and safety audits and inspections; the risk management, hazard analysis and fume hood operation; responding to chemical spills in the fume hood; and the evacuation protocols and emergency response effectiveness.

Course Objectives

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

- Apply and gain an in-depth knowledge on laboratory fume hood safety and maintenance
- Discuss the importance, types and components of laboratory fume hoods
- Explain the basic principles of fume hood operation, laboratory layout and fume hood placement and regulatory and compliance standards
- Carryout pre-operational checks, safe handling of hazardous materials and fume hood work practices
- Identify the common fume hood errors and risks and use proper personal protective equipment (PPE)
- Employ emergency procedures, routine cleaning and maintenance, filter inspection and replacement
- Apply airflow testing and monitoring and preventive maintenance schedule
- Address common maintenance issues and apply contractor and vendor management
- Recognize acid digestion hoods, perchloric acid hoods, radioisotope hoods and high-performance and energy-efficient fume hoods
- Discuss energy efficiency in fume hoods, fume hood performance failures and safety audits and inspections
- Carryout risk management, hazard analysis and fume hood operation
- Respond to chemical spills in the fume hood, practice evacuation protocols and review emergency response effectiveness

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 for laboratory fume hood safety and maintenance for safety officers or managers, laboratory personnel, lab supervisors or faculty, environmental health and safety (EHS) coordinators, facility management personnel and other technical staff.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

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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.

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.

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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.

Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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. John Burnip (British), BA, EHS, SAC, STS, NEBOSH, TechIOSH, is a **NEBOSH Approved Instructor** and a **Senior HSE Consultant** with over **45 years** of practical **Offshore & Onshore** experience within **Oil, Gas, Refinery, Petrochemical** and **Nuclear** industries. His wide experience covers **HSSE Audit & Inspection, HSSE Management System, ISO 45001 Occupational Health & Safety Management System, Effective Internal Audits, Audit Findings Report, Audit Follow-up, Continual Improvement, Safety Behavior, HSSE Management System Processes & Procedures, HSSE Practice & Regulations, HSSE Principles & Practices, Hazard Identification & Risk Management Techniques, HSSE Management System, HSSE Compliance & Policies, HSSE Procedures & Guidelines, Accident & Incident**

Condition Reporting, Incident & Accident Investigation, Near Miss Reporting, Root Cause Analysis, HSE Rules & Regulations, Process Safety Management (PSM), Process Hazard Analysis (PHA), Techniques, HAZOP, HSE Risk, Pre-Startup Safety Reviews, HSE Risk Identification, Assessments & Audit, HSE Risk Assessment & Management Concepts, HSE Impact Assessment, HSE Management Policy & Standards, Fundamentals of HSSE Emergency Response & Crisis Management Operations, Confined Space Entry, NEBOSH International General Certificate in Occupational Health & Safety, NEBOSH National Certificate in Construction Health & Safety, Safety in Gas Plants & Facilities Foundations, HSSE Principles & Practices, HSE Warehousing Policies & Regulations, HSE Quantitative Risk Assessment (QRA), Root Cause Analysis & Techniques, Hazardous Materials & Chemicals Handling, Chemical Spills, Safety Precaution & Response Action Plan, PSM, HAZMAT, PHA, HAZOP, HAZID, Hazard & Risk Assessment, Task Risk Assessment (TRA), Incident Command, Accident & Incident Investigation, Emergency Response Procedures, Job Safety Analysis (JSA), Behavioural Based Safety (BBS), Fall Protection, Work Permit & First Aid, Emergency Response, H₂S, ERP Preparation, Project HSE Management System, Health & Hygiene Inspection, PTW Control, Process Modules Fire & Gas Commissioning, MSDS, Ergonomics, Lockout/Tagout, Fire Safety & Protection, Spill Prevention & Control, Tower & Scaffold Inspection, Scaffolding Operations, Scaffolding Equipment, Bracket Scaffolds, Scaffolding Labelling, Pre-fab Scaffolding; Erecting, Maintaining & Dismantling Scaffolding in accordance with the British Standards Code of Practice 5973; Heavy Lifting operations, Cantilevered Hoists, Offshore Operations, Offshore Construction, Basic Offshore Safety Induction & Emergency Training (BOSIET), Onshore Fabrication & Offshore Pipelaying & Hook-Up, Crane Inspection, Crane Operations, Oilfield Startup & Operation, Steel Fabrication, OSHA, ISO 9001, ISO 14001, OHSAS 18001 and IMO (SOLAS) Regulations. Mr. Burnip has greatly contributed in upholding the highest possible levels of safety for numerous International Oil & Gas projects, Generation Systems & Platform Revamp, LPG & Gas Compression, Marine, Offshore and Power Plant Construction. Currently, he is the **HSE Advisor of Solvay wherein he is responsible in planning and implementation of the corporate safety program (OSHA codes).**

During Mr. Burnip's long career life, he had successfully carried out numerous projects in **Europe, North America, South America, Southeast Asia, Middle East** and the **North Sea**. He had worked for **Likpin Dubai, SADRA/DOT, ZADCO, McDermott International (USA, Qatar, Egypt, India, Oman, Dubai and Abu Dhabi), PDO, Shell, ARAMCO, Salman Field, Leman Offshore Gas Field, GEC, Harland & Wolff PLC Belfast in North Ireland, Howard Doris – Kishorn in Scotland, Westinghouse Electric in Brazil and South Korea and Chevron Oil in Scotland** as the **Commissioning Project Engineer, Project & Safety Engineer, Estimating Engineer, Senior Instrument Engineer, Instrument Field Engineer, Lead Instrument Engineer, Instrument Engineer, Engineer, Emergency Response Training Manager, HSSE Manager, HSE Advisor, HSE Instructor, HSE Supervisor, Instrumentation Supervisor, Instrumentation Specialist, Project Coordinator, Lead & Internal Auditor, Instrumentation Technician and Tank Farm Instrumentation Technician**.

Mr. Burnip has a **Bachelor degree in Chemical Engineering** and a **Bachelor of Arts degree in Business Studies** from the **Somerset University (UK)**. He is a **Certified/Registered Tutor** in **NEBOSH Certificate in Environmental Management** and in **NEBOSH International General Certificate**, a **Certified Safety Auditor (SAC)**, **Environmental Health and Safety Management Specialist** on **Fall Protection, Elevated Structures, Material Handling, Trenching & Excavations, and Welding Brazing Safety Technician**, a **Certified Safety Administrator (CSA) - General Industry**, a **Safety Manager/Trainer – General Industry**, a **Petroleum Safety Manager (PSM) - Drilling & Servicing**, a **Petroleum Safety Specialist (PSS) - Drilling & Servicing**, a **Safety Planning Specialist**, a **Safety Training Specialist**, a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)** and further holds a Certificate in **Mechanical Engineering Craft Practice** from the **City & Guilds of London Institute**, a **NEBOSH Level 3 Construction Certificate (UK)**, an **Occupational Health & Safety Management Systems Internal Auditor (OHSAS 18001: 2007)** and a **Cambridge Teaching Certificate**. He is a well-regarded member of the **National Association of Safety Professionals**, the **Association of Cost Engineers (UK)**, **Institution of Occupational Safety & Health (TechIOSH)** and an **Associate Member of World Safety Organization**. Further, he has conducted innumerable trainings, workshops and conferences worldwide.

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 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 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0930	Importance of Laboratory Fume Hoods <i>Key Definition & Purpose of Fume Hoods • Role of Fume Hoods in Lab Safety • Common Hazards Mitigated by Fume Hoods • Industry Standards for Fume Hoods (e.g., OSHA, ANSI, ASHRAE)</i>
0930 - 0945	<i>Break</i>
0945 – 1045	Types of Fume Hoods <i>Conventional or Ducted Fume Hoods • Ductless Fume Hoods & Their Applications • Biological Safety Cabinets versus Fume Hoods • Specialized Fume Hoods (e.g., Acid, Perchloric)</i>
1045 - 1145	Components of a Fume Hood <i>Hood Body: Materials & Design • Baffles & Airfoil Mechanisms • Sash Types: Vertical, Horizontal, & Combination • Ductwork & Exhaust System</i>
1145 - 1230	Basic Principles of Fume Hood Operation <i>Airflow Dynamics & Face Velocity • Containment Zones & Boundary Layers • the Effect of Cross-Drafts & Turbulence • Importance of Sash Position</i>
1230 – 1245	<i>Break</i>
1245 – 1330	Laboratory Layout & Fume Hood Placement <i>Proper Location of Fume Hoods in Labs • Minimizing Interference from Foot Traffic • Proximity to Power & Ventilation Systems • Common Layout Mistakes to Avoid</i>



1330 - 1420	Regulatory & Compliance Standards Overview of OSHA, NFPA, & ASHRAE Standards • ANSI/AIHA Z9.5 Laboratory Ventilation Standard • Periodic Testing Requirements for Compliance • Documentation & Record-Keeping for Audits
1420 - 1430	Recap 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
1430	End of Day One

Day 2

0730 - 0830	Pre-Operational Checks Inspecting the Hood & Components for Damage • Verifying Airflow & Face Velocity • Checking for Obstructions in the Baffles & Ductwork • Ensuring Sash & Lighting Function Properly
0830 - 0930	Safe Handling of Hazardous Materials Identifying Compatible Chemicals for Use in Fume Hoods • Storage & Transport Considerations for Chemicals • Preventing Spills & Managing Splashes • Safe Disposal of Chemical Waste
0930 - 0945	Break
0945 - 1130	Fume Hood Work Practices Proper Sash Positioning During Experiments • Minimizing Disruptions to Airflow • Setting Up Equipment & Materials Safely • Avoiding Storage of Items Inside the Hood
1130 - 1230	Common Fume Hood Errors & Risks Working with the Sash Fully Open • Overloading the Workspace • Blocking Baffles with Materials • Misusing Ductless Hoods for Volatile Chemicals
1230 - 1245	Break
1245 - 1330	Personal Protective Equipment (PPE) Appropriate PPE when Using a Fume Hood • Selecting Gloves, Goggles, Lab Coats PPE for Specific Tasks • Respiratory Protection Considerations • PPE Maintenance & Disposal
1330 - 1420	Emergency Procedures Responding to Chemical Spills in Fume Hoods • Handling Fume Hood Malfunctions • Steps to Follow During Power or Ventilation Failure • Evacuation Protocols for Chemical Exposure
1420 - 1430	Recap 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
1430	End of Day Two

Day 3

0730 - 0830	Routine Cleaning & Maintenance Cleaning the Sash, Baffles, & Interior Surfaces • Removing Chemical Residues Safely • Guidelines for Periodic Deep Cleaning • Proper Cleaning Materials & Techniques
0830 - 0930	Filter Inspection & Replacement Types of Filters used in Fume Hoods • Signs of Clogged or Damaged Filters • Proper Filter Replacement Procedures • Disposal of used Filters Following Regulations



Day 4

0730 – 0830	Specialized Fume Hoods <i>Acid Digestion Hoods: Construction & Use • Perchloric Acid Hoods: Wash-Down Features • Radioisotope Hoods: Lead Shielding Requirements • High-Performance & Energy-Efficient Fume Hoods (e.g., Variable Air Volume Systems)</i>
0830 – 0930	Energy Efficiency in Fume Hoods <i>Variable Air Volume (VAV) Systems • Sash Management for Energy Savings • Evaluating Energy-Efficient Designs • Retrofits for Conventional Hoods</i>
0930 - 0945	Break
0945 – 1130	Fume Hood Performance Failures <i>Identifying Warning Signs of Performance Decline • Diagnosing Causes of Leaks or Inefficiencies • Immediate Steps to Address Failures • Reporting & Escalation Procedures</i>
1130 - 1230	Safety Audits & Inspections <i>Purpose of Periodic Safety Audits • Fume Hood Inspection Checklist • Collaborating with Safety Officers • Addressing Audit Findings</i>
1230 - 1245	Break
1245 - 1330	Risk Management & Hazard Analysis <i>Assessing Chemical Risks in Fume Hood Use • Mitigating Risks Through Proper Training • Scenario-Based Hazard Evaluations • Continuous Improvement Plans</i>
1330 - 1420	Training & Certification <i>Importance of Ongoing Staff Training • Certification Programs for Fume Hood Users • Developing In-House Training Modules • Refresher Courses & Re-Certification Schedules</i>
1420 – 1430	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>
1430	End of Day Four

Day 5

0730 – 0930	Practical Fume Hood Operation <i>Setting Up & Conducting a Safe Experiment • Simulating Airflow Disruptions & Troubleshooting • Adjusting Sash Positions During Use • Conducting Post-Use Cleanup</i>
0930 - 0945	Break
0945 - 1130	Maintenance Simulation <i>Performing a Filter Inspection & Replacement • Testing Airflow & Face Velocity • Cleaning the Hood & Resolving Blockages • Logging Maintenance Tasks in a Checklist</i>
1130 - 1230	Emergency Drill <i>Responding to Chemical Spills in the Fume Hood • Reacting to a Fume Hood Failure Simulation</i>
1230 - 1245	Break

1245 - 1300	Emergency Drill (cont'd) <i>Practicing Evacuation Protocols • Reviewing Emergency Response Effectiveness</i>
1300 - 1315	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1315 - 1415	POST TEST
1415 - 1430	<i>Presentation of Course Certificates</i>
1430	<i>End of Course</i>

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

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