

COURSE OVERVIEW PE0310

Sulfur Recovery Process Technology

Course Title

Sulfur Recovery Process Technology

Course Date/Venue

Session 1: August 31-September 04, 2025/Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE

Session 2: November 09-13, 2025/Crowne Meeting Room, Crowne Plaza Al Khobar, an IHG Hotel, Al Khobar, KSA



Course Reference

PE0310

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.



Hydrogen sulfide, carbon dioxide, mercaptans and other contaminants are often found in natural gas streams. H_2S is a highly toxic gas that is corrosive to carbon steels. CO_2 is also corrosive to equipment and reduces the Btu value of gas. Gas sweetening processes remove these contaminants so the gas is suitable for transportation and use.



This course presents a complete and up-to-date overview of the Gas Sweetening, Liquid Hydrocarbon Sweetening and Sulphur Recovery with emphasis on gas plant process operations. The process flow sheets of several Sweetening and Sulphur Recovery Processes will be used to illustrate how the various operations differ. The advantages, limitations, and range of applicability of each process will be discussed so that its selection and integration into the overall plant is fully understood and appreciated.

Upon completing this course, you will have a good understanding of Gas Sweetening, Liquid Hydrocarbon Sweetening and Sulphur Recovery. There are many methods that may be employed to remove acidic components (primarily H₂S and CO₂) from hydrocarbon streams. The available methods may be broadly categorized as those depending on chemical reaction, absorption, or adsorption. Processes employing each of these techniques are described. Many of the processes result in acid gas streams that contain H₂S that may be flared, incinerated, injected or fed to a Sulphur Recovery Unit. Various Sulphur Recovery Processes (primarily The Modified Claus Process) are discussed. You will also learn the basic vocabulary unique to the industry.

Course Objectives

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

- Apply and gain an in-depth knowledge on gas sweetening and sulphur recovery and identify the safety precautions and the types of contaminants including their effects
- Discuss the concept of process selection as well as the chemical reaction processes used in gas sweetening and sulphur recovery
- Employ systematic methodology of inlet separation and filtration and distinguish their features and importance
- Identify the concept of flash tank and corrosion as applied in gas sweetening and sulphur recovery and acquire knowledge on foaming and materials
- Describe the principles of batch processes, SWS, amines and reclaimer and introduce the topic of liquid redox as applied in gas sweetening and sulphur recovery
- Explain the various physical and combination processes and gain an in-depth knowledge on caustic wash, alkaline process and liquid HC sweetening
- Discuss the amine plant process and modified claus plant as well as their practical application on gas sweetening and sulphur recovery
- Determine the mechanical consideration and process consideration of gas sweetening and sulphur recovery
- Carryout the procedure on re-heating operation as well as instrumentation and degasification and discover their features and functions

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 gas sweetening and sulfur recovery for managers, engineers and other technical staff who are directly involved in gas processing operations.

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

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

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

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

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

Haward Technology Middle East will award **3.0 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. Robert Harvey, MSc (Cum Laude), BSc is a **Senior Process & Chemical Engineer** with over **30 years** of in-depth industrial experience within the **Oil & Gas, Refinery, Petrochemical, Mining and Power** industries. His expertise widely covers in the areas of **Operations Abnormalities & Plant Upset, Fertilizer Manufacturing Process Technology, Fertilizer Storage Management (Ammonia & Urea), Petrochemical & Fertilizer Plants, Nitrogen Fertilizer Production, Petroleum Industry Process Engineering, Process Equipment Design & Troubleshooting, Process Equipment & Piping Systems, Fertilizer**

Manufacturing Process Technology, Production Management, Process Plant Optimization & Continuous Improvement, Production Process Optimization, Process Analyzers, Process Equipment Design, Vinyl Chloride Monomer (VCM) Manufacturing & Process Troubleshooting, Cement Manufacturing Process Technology & Standards, Process Equipment & Piping System, Process Plant Optimization & Continuous Improvement, Process Plant Performance & Efficiency, Troubleshooting Process Operations, Modern Aluminium Production Processes, Cement Kiln Process, Process Engineer Calculations, Steel Making Process, Process Diagrams Review, Process Hazard Analysis (PHA), Process Mapping, Strategical Process Control in Process Industry, Revamping & Debottlenecking, Pressure Vessel Operation, Heat Mass Balance, Distillation-Column Operation, & Troubleshooting, Debottlenecking, Unit Performance Optimization, Real Time Online Optimization, Operations Planning Optimization, Engineering Problem Solving, Bag Filters Operation & Maintenance, Chemical Reaction Engineering Application, Phosphatic Industry, Diammonium Phosphate, Monoammonium Phosphate, NPK, Troubleshooting Improvement, Production Management, Distillation-Column Operation & Troubleshooting, Monomer Handling Safety, Complex Operational Troubleshooting, Incident Root Cause Analysis & Corrective Action, Fertilizer Manufacturing, Continuous Improvement & Benchmarking, Energy Efficiency for Process Plants, Pressure Vessel Operation, Reactors & Storage Tanks, Dehydrating Columns, Heat & Material Balance, P&ID Reading & Interpretation, Detailed Engineering Design, HAZOP Leadership, Project HSE Review (PHSER), Safe Handling of Propylene Oxide & Ethylene Oxide, Safety in Process & Industrial Plants, Environmental Impact Assessment (EIA) and Effective Risk Assessment & HAZOP Studies. Further, he is also well versed in Feasibility Studies Analysis & Evaluation, Project Gate System Procedures, Change Management Skills, Change Management Strategy, Developing Commercial Contracts, Project Management Skills, Project Scheduling & Cost Control, FIDIC & Other Model Contracts, EPC & EPCM Contracts, Knowledge Management, Job Evaluation, Creative Problems Solving & Innovation Skills, Problem Solving & Decision Making, Strategic Planning & Creative Thinking and Mind Mapping.

During his career life, Mr. Harvey has gained his practical and field experience through his various significant positions and dedication as the **Commercial Director, Manufacturing Director, Chief Operating Officer, Head Projects Division, Project Leader, Lead Technical Advisor/Consultant and Project Consultant** to various international companies such as the Trade and Industrial Policy Strategies (TIPS), PGBI Johannesburg, IDC Green Industries SBU/Arengo 316 Pty Ltd, Ferrum Crescent Limited, CEF Limited, Rio Tinto Alcan, Industrial Development Corporation of SA (IDC) and AECI Limited.

Mr. Harvey has **Master (Cum Laude)** and **Bachelor** degrees in **Chemical Engineering**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)** and has delivered various trainings, seminars, conferences, workshops and courses globally.

Accommodation

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

Course Fees

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

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.

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 – 0900	Terminology
0900 – 0930	Safety Precautions
0930 – 0945	<i>Break</i>
0945 – 1030	Types of Contaminants
1030 – 1115	Process Selection
1115 – 1200	Chemical Reaction Processes
1200 – 1215	<i>Break</i>
1215 – 1300	General Considerations
1300 – 1345	Inlet Separation
1345 – 1420	Filtration
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0930	Flash Tank
0930 – 0945	<i>Break</i>
0945 – 1045	Corrosion
1045 – 1200	Foaming, Material

1200 – 1215	<i>Break</i>
1215 – 1330	<i>Batch Processes, SWS, Amines & Reclaimer</i>
1330 – 1420	<i>Liquid Redox</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0830	<i>Physical Process</i>
0830 – 0930	<i>Combination Process</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Caustic Wash</i>
1030 – 1115	<i>Alkaline Process</i>
1115 – 1200	<i>Case Study</i>
1200 – 1215	<i>Break</i>
1215 – 1330	<i>Liquid HC Sweetening</i>
1330 – 1420	<i>Case Study – Amine Plant Process</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 – 0930	<i>Amine Plant Process</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Modified Claus Plant</i>
1100 – 1200	<i>Mechanical Consideration</i>
1200 – 1215	<i>Break</i>
1215 – 1420	<i>Process Configuration</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Four</i>

Day 5

0730 – 0930	<i>Re-Heating Operation</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Instrumentation, Degassification</i>
1100 – 1200	<i>Instrumentation, Degassification (cont'd)</i>
1200 – 1215	<i>Break</i>
1215 – 1345	<i>Case Study – Tail Gas Clean-up</i>
1345 – 1400	<i>Course Conclusion</i>
1400 – 1415	<i>POST-TEST</i>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

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



Course Coordinator

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