COURSE BROCHURE

Natural Gas Processing and Conditioning

A practical program covering each stage of natural gas processing, from inlet separation through dehydration, sweetening, dew point control and NGL recovery, with operating calculations and troubleshooting.

Code	HT-OGE-123
Category	Oil & Gas, Engineering & Maintenance
Duration	1 week
Level	Intermediate

Introduction

Gas can only be sold, liquefied or injected once it meets tight limits on water content, acid gases and hydrocarbon dew point. With sour gas and associated gas projects expanding across the region, plants need engineers and operators who understand what happens inside each unit and why product goes off-spec.

Objectives

- Read a gas analysis and relate it to sales gas specifications such as heating value, Wobbe index and dew point
- Predict hydrate formation conditions and calculate the inhibitor dosage required
- Explain the TEG dehydration loop and calculate the glycol circulation rate
- Compare amine solvents, physical solvents and membranes for H2S and CO2 removal
- Select a dew point control or NGL recovery scheme that fits the gas composition and the commercial objective

Who should attend

- Process engineers in gas plants
- Control room operators and shift supervisors
- Project and design engineers working on gas facilities
- Production and surface facilities engineers

Skills you will develop

- Water content and hydrate calculations
- Operation of dehydration and sweetening units
- Reading phase envelopes and process flow diagrams
- Gas plant troubleshooting

Learning Outcomes

- Read gas water content from the McKetta-Wehe chart and calculate the water to be removed
- Estimate the amine circulation rate needed for a given gas flow and acid gas concentration
- Diagnose the likely causes of foaming, solvent losses or a high dew point and propose corrective action
- Draw a block flow diagram of a processing plant suited to a raw gas of known composition and a required specification

Course Outline

Day 1: Gas Properties, Specifications and Inlet Facilities

- Gas composition, compressibility factor Z, the phase envelope and retrograde condensation
- Sales gas and pipeline specifications: water content, acid gases and heating value
- Slug catchers, inlet separators and condensate stabilization

Day 2: Hydrates and Gas Dehydration

- Water content of gas, hydrate prediction and methanol or MEG dosage from the Hammerschmidt equation
- TEG dehydration unit: contactor, regeneration and stripping gas
- Molecular sieve dehydration: adsorption and regeneration cycles and when it is preferred to glycol

Day 3: Acid Gas Removal and Sulfur Recovery

- MEA, DEA and MDEA solvents: selectivity, acid gas loading and circulation rate
- Amine unit problems: foaming, corrosion, solvent degradation and heat stable salts
- Physical solvents and membranes, with an overview of the Claus unit and tail gas treating

Day 4: Dew Point Control and NGL Recovery

- Joule-Thomson valve cooling and mechanical propane refrigeration
- Turboexpander process and deep recovery of ethane and propane
- Fractionation train: deethanizer, depropanizer, debutanizer and product specifications

Day 5: Operation, Troubleshooting and Applied Project

- Mercury removal and protection of aluminum heat exchangers
- Off-spec cases: tracing the cause from operating data and laboratory analyses
- Applied project in which each team designs a processing scheme for a wet sour gas and calculates the TEG and amine circulation rates

Training methodology

Calculation exercises on the McKetta-Wehe chart and hydrate formation curves
Walking through process flow diagrams of dehydration and sweetening units
Group analysis of troubleshooting cases from sour gas plants
Closing project to design and present a processing scheme

Certification

Participants receive a Harbor Training Center certificate of attendance on completing the course.

Upcoming dates

City	Dates	Language	Fee
Istanbul	1 – 5 March 2027	AR	EUR 5,400
Dubai	8 – 12 March 2027	EN	EUR 4,800
London	15 – 19 March 2027	AR	EUR 5,800
Amsterdam	22 – 26 March 2027	EN	EUR 6,100
Online	5 – 9 April 2027	AR	EUR 2,800
Istanbul	6 – 10 September 2027	EN	EUR 5,400
Dubai	13 – 17 September 2027	AR	EUR 4,800
London	20 – 24 September 2027	EN	EUR 5,800
Amsterdam	27 September 2027 – 1 October 2027	AR	EUR 6,100
Online	4 – 8 October 2027	EN	EUR 2,800

Fees are per participant.

Contact us

Email info@harbor4training.com

Address istanbul Turkey

To register and for details, scan the code or visit:

https://harbor4training.com/en/courses/gas-processing-conditioning