OVERVIEW OF GAS PROCESSING

COURSE OVERVIEW

This comprehensive 5-day course offers an in-depth overview of natural gas processing operations from wellhead to pipeline. Participants will gain a solid understanding of how raw natural gas is treated and processed to meet commercial and environmental specifications. The course covers key gas processing stages, including gas separation, dehydration, sweetening, NGL recovery, sulfur recovery, and product fractionation, with a focus on both technical principles and operational best practices.

The course combines theoretical instruction with real-world examples, process flow diagrams, and case studies to help participants understand the functionality and integration of various gas processing units.

DATES, VENUES AND FEES

14 – 18 December 2025 - Dubai

(5 Days)

Fees US$ 4500

Note: Fee is per participant + 5% VAT (if applicable).
Groups from the same company can enjoy a **discounted** price.

WHO SHOULD ATTEND?

This course is appropriate for a wide range of professionals but not limited to:

- Process and operations engineers new to the gas processing industry
- Maintenance and instrumentation engineers working in gas facilities
- Field and plant operators seeking a broader understanding of plant processes
- HSE professionals and auditors working with gas treatment and processing facilities
- Commercial staff, planners, and project managers involved in gas projects
- Anyone seeking foundational knowledge of gas processing principles

CONTACT US NOW

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ACCREDITATION

This training course is certified by CPD.

The CPD Certification Service is the leading independent CPD accreditation institution operating across industry sectors to complement the Continuing Professional Development policies of professional institutes and academic bodies. The CPD Certification Service provides support, advice, and recognised independent CPD accreditation compatible with global CPD principles. CPD is the term used to describe the learning activities professionals engage in to develop and enhance their abilities and keep skills and knowledge up to date. CPD Units are only awarded to programmes after each programme is scrutinised to ensure integrity and quality according to CPD standards and benchmarks.

COURSE CERTIFICATE

MSTC certificate will be issued to all attendees completing a minimum of 80% of the total tuition hours of the course.

CPD internationally recognized certificate will be issued for all participants who will meet the course requirements.
CPD certificates will be issued within a month of the successful completion of the course.

TRAINING METHODOLOGY

- Expert-led sessions with dynamic visual aids
- Comprehensive course manual to support practical application and reinforcement
- Interactive discussions addressing participants' real-world projects and challenges
- Insightful case studies and proven best practices to enhance learning

LEARNING OBJECTIVES

By the end of this course, participants should be able to:

- Understand the overall gas processing value chain and its economic importance.
- Explain the purpose and basic operation of major gas processing units.
- Interpret and analyze basic gas plant process flow diagrams.
- Identify and troubleshoot common operational issues in gas processing systems.
- Recognize key design and safety considerations across different process stages.
- Appreciate emerging technologies and environmental regulations in gas processing.

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COURSE OUTLINE

DAY 1

Introduction to Natural Gas and Inlet Facilities

- Pre test
- Overview of natural gas composition and properties
- The natural gas value chain: upstream to downstream
- Gas specifications and sales requirements
- Overview of gas processing plants and major equipment
- Inlet separation: slug catchers, separators, and filtration
- Overview of material and energy balances in gas processing
- Workshop

DAY 2

Gas Dehydration and Hydrocarbon Recovery

- Causes and effects of water and hydrate formation
- Gas dehydration methods: Glycol (TEG) and Molecular Sieves
- Design and operation of dehydration units
- NGL (Natural Gas Liquids) recovery processes
    - JT (Joule-Thomson) expansion
    - Refrigeration-based systems
    - Cryogenic turbo-expander processes
- Case Study

DAY 3

Gas Sweetening and Acid Gas Treatment

- Overview of acid gases (H_2S, CO_2) and their effects
- Amine treating systems: MEA, DEA, MDEA
- Amine circulation, regeneration, and common issues (foaming, corrosion)
- Solid and liquid scavengers
- Membrane and adsorption systems for gas sweetening
- Workshop

DAY 4

Sulfur Recovery, Fractionation, and Utilities

- Sulfur recovery methods: Claus process and Tail Gas Treatment Units (TGTU)
- Overview of fractionation: demethanizer, deethanizer, and debutanizer towers
- Compression and refrigeration systems in gas processing
- Overview of plant utilities: fuel gas, instrument air, nitrogen, cooling water
- Safety systems: pressure relief, flare systems, and HAZOP basics
- Exercise

DAY 5

Process Integration, Troubleshooting & Future Trends

- Integration of process units for efficient operation
- Common operational challenges and troubleshooting strategies
- Process optimization and energy efficiency in gas plants
- Introduction to digitalization, automation, and low-carbon technologies
- Environmental considerations and emissions management
- Group Exercise
- Course review, Q&A, and Post test

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