



PCE127

Modern Gas Conditioning and Processing Technology

Course Introduction:

This course is designed to provide attendees with a complete and up-to-date overview of gas conditioning and processing technology. It covers product specifications and the processes available to condition the gas in order to meet these requirements. Participants will understand the nature and purpose of key gas processing operations, and how the individual operations are integrated into plants to process diverse streams received from gas fields around the world.

The course will provide the attendees with a working knowledge of the major processes for Dehydration, Acid Gas Removal (Gas Sweetening), Hydrocarbon Dewpoint Control (HCDP Control), LPG Production, NGL Recovery and Separation (Fractionation), Sulphur Recovery and Tail Gas Clean-up. Attendees will also learn the basic vocabulary unique to the industry and the key physical and chemical properties of natural gas constituents.

This course will also cover the important considerations of the design and selection of key process equipment including Separators.

Basic properties of hydrocarbon gases and the behaviour of water-hydrocarbon systems will be discussed. Attendees will learn how to calculate system energy changes. This course will discuss the design and operational aspects of process control systems, separation equipment, absorption and fractionation facilities. Further, the methods used for dehydrating natural gas will be covered within the duration of this essential course.

Course Objectives:

Upon successful completion of this course, the delegates will learn:

- ✓ Application of gas engineering and technology in facilities and gas plants
- ✓ Important specifications for gas, NGL, and condensate
- ✓ About the selection and evaluation of processes used to dehydrate natural gas, meet hydrocarbon dewpoint specifications, and extract NGLs
- ✓ Recognize the role and importance of water content and dewpoint applied in gas conditioning & processing technology
- ✓ Identify the various types of separators and their sizing and become acquainted with slug catcher and twister super sonic separator
- ✓ How to apply physical/thermodynamic property correlations and principles to the operation, design, and evaluation of gas processing facilities
- ✓ Practical equipment sizing methods for major process equipment
- ✓ To evaluate technical validity of discussions related to gas processing

- ✓ To recognize and develop solutions for operating problem examples and control issues in gas processing facilities
- ✓ Review and improve the amine process, corrosion, process control, physical, combined & sulfinol processes
- ✓ Carryout the operation and control of natural gases as well as the Sulphur recovery
- ✓ Employ catalyst converter operation and distinguish the tail gas clean up options

Who Should Attend?

This course is intended for all production and processing personnel involved with natural gas and associated liquids, to acquaint or reacquaint themselves with gas conditioning and processing unit operations. This course is for facilities engineers, process engineers, senior operations personnel, field supervisors, instrumentation & control, and engineers who select, design, install, evaluate, or operate gas processing plants and related facilities. A broad approach is taken with the topics.

Course Outline:

Day 1:

- Gas processing systems
- Physical properties of hydrocarbons
- Terminology and nomenclature
- Qualitative phase behavior

Day 2:

- Vapor-liquid equilibrium
- Water-hydrocarbon phase behavior, hydrates, etc.
- Basic thermodynamics and application of energy balances

Day 3:

- Process control and instrumentation
- Relief and flare systems
- Fluid hydraulics; two-phase flow
- Separation equipment

Day 4:

- Heat transfer equipment
- Pumps
- Compressors and drivers
- Refrigeration in gas conditioning and NGL extraction facilities

Day 5:

- LPG Production
- Fractionation
- Sulphur Recovery
- Glycol dehydration; TEG
- Adsorption dehydration and hydrocarbon removal
- Gas treating and sulfur recovery
- Tail Gas Clean-up

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per course location. This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

