



Oil-Gas-Water Three-phase Separation Fundamentals

Course Introduction:

This 5-day theoretical training course, "Oil-Gas-Water Three-Phase Separation Fundamentals," is designed to provide participants with a comprehensive understanding of the principles, technologies, and operational practices involved in three-phase separation systems.

Throughout the course, participants will explore the various methods of separating oil, gas, and water, including the physics of separation, the design of separators, and the operational parameters that influence performance. Emphasis will be placed on understanding the properties of the fluids involved, the role of equipment such as separators and heaters, and the best practices for ensuring efficient operation. By analyzing case studies and industry examples, attendees will gain valuable insights into the challenges and solutions associated with three-phase separation, preparing them for effective decision-making in their roles.

Course Objectives:

By the end of the program, participants will be able to:

- Understand the fundamental principles of three-phase separation in oil and gas operations.
- Learn about the physical properties of oil, gas, and water that influence separation processes.
- Explore different types of separation technologies and equipment used in the industry.
- Analyze operational parameters and best practices for optimizing three-phase separation.
- Familiarize participants with troubleshooting techniques for common separation challenges.

Who Should Attend?

This course is intended for Process engineers and operators in the oil and gas industry, Production and facilities managers responsible for separation processes, Quality assurance and compliance professionals and Environmental engineers and safety officers.

Course Outline:

Day 1: Introduction to Three-Phase Separation

- Overview of three-phase separation and its importance in oil and gas production
- Key definitions and concepts related to oil, gas, and water separation
- Historical development and advancements in separation technology

Day 2: Physical Properties of Fluids

- Examination of the physical properties of oil, gas, and water
- Understanding the behavior of multiphase systems and phase interactions
- Impact of temperature and pressure on phase separation

Day 3: Separation Technologies and Equipment

- Overview of different types of separation technologies: gravity separation, centrifugation, and thermal methods
- Detailed examination of key equipment: separators, heaters, and scrubbers
- Process flow diagrams (PFDs) and piping and instrumentation diagrams (P&IDs) in separation systems

Day 4: Operational Parameters and Best Practices

- Critical operational parameters influencing three-phase separation efficiency
- Best practices for operating separators and managing fluid flow
- Monitoring and control strategies for optimizing separation performance

Day 5: Troubleshooting Three-Phase Separation Challenges

- Common challenges and issues encountered in three-phase separation
- Systematic approaches to troubleshooting and resolving separation problems
- Case studies highlighting successful solutions in three-phase separation operations

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

Course Fees:

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

Course Certificate:

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

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