



THE CHEMICAL ENGINEERING MAJOR

Oil Production & Sub Center Operations

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Oil Production & Sub Center Operations

Introduction:

This comprehensive 10-day course provides an insight into oil productions and sub-center operations equipping the participants with necessary, essential information and skills of crude oil production and the processes and equipment used in gathering and processing. It is typically developed to meet and suit the needs of all technical, operations and maintenance personnel involved in oil gathering and processing, or for senior petroleum engineers, production engineers and coordinators that need a thorough and complete understanding of oil production, oil gathering centers and sub centers and processing operations. This course focuses on oil and gas separation techniques and equipment. It combines both theoretical and practical, hands-on training that leads to better understanding and enhanced application.

Who Should Attend?

Sub-center Coordinators, Production Coordinators, Sub-center Engineers and Supervisors, Production Engineers & Technologists, Production Operators II, Petroleum Engineers, Production operations personnel and all dealing with sub-center operations.

Course Objectives:

By the end of this course delegates will be able to:

- Be more able to master sub center operations, procedures and techniques
- Know separation techniques, technology and sub center operations
- Know about oil, water and gas treatment
- Well inflow performance and its impact on processing facilities
- Gain knowledge about oil, gas, and water compositions and properties needed for equipment selection and sizing
- Select and evaluate processes and equipment used to meet sales or disposal specifications
- Perform equipment sizing calculations for major production facility separation equipment
- Know the well and surface processing equipment
- Know the practical operating recommendations of equipment such as startup, shutdown and isolation
- Be more able to develop solutions to operating problems in oil and water processing facilities
- Learn about new state-of-the-art separation technology and the different types of separation equipment utilized in the oil and gas industry
- Learn about separator operation, control and process problems
- Learn about the separation performance capabilities of the different types of equipment
- Learn how to size the different types of separation equipment
- Learn about new developments in separation equipment design

- Learn how to troubleshoot all problems of separation equipment
- Learn about the instrumentation and controls used on separation equipment
- Be more familiar with safety issues and procedures
- Be more able to identify all hazardous and control them
- Be more able to actively respond in case of emergencies

Course Outline:

- Oil and water separation and treatment
- Gas separation and treating
- Flow lines, manifolds and gathering systems
- Gas and liquid separation equipment
- Overview of upstream oil and gas production operations
- Fluid properties and phase behaviour
- Overview of artificial lift
- Processing configurations
- Phase separation of gas, oil, and water
- Sand, wax, and asphalteness
- Field desalting
- Crude stabilization and sweetening
- Crude oil storage and vapour recovery
- Measurement of crude oil
- Transportation of crude oil
- Produced water treating
- Valves and safety systems
- Water injection systems

- Compression
- Dehydration
- Storage considerations
- Water handling and distribution
- Oil density in surface conditions
- Viscosity and thermal characteristics
- Composition of associated gas and dead oil
- Physical properties of methanol
- Injection of methanol into pipelines
- Pumpless methods of methanol injection