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OIL AND GAS | OG-021

Efficient Gas Processing and Conditioning for Field Engineers

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Course content

Why Attend

Why Attend Efficient gas processing is essential for ensuring product quality, operational reliability, regulatory compliance, and safe field operations. This course equips participants with the knowledge and practical skills required to understand natural gas processing systems, gas conditioning technologies, separation processes, dehydration, sweetening, troubleshooting, and operational best practices for modern gas processing facilities.

Course Methodology The course combines technical presentations, process simulations, engineering calculations, case studies, practical workshops, troubleshooting exercises, and real-world gas processing scenarios to strengthen participants' operational and technical capabilities.

Course Objectives By the end of this course, participants will be able to:

- Understand the principles of natural gas processing and conditioning
- Operate and optimize gas separation and treatment systems
- Apply gas dehydration and sweetening technologies effectively
- Identify and resolve common operational challenges in gas processing plants
- Improve plant efficiency, reliability, and product quality
- Apply safety, environmental, and risk management principles in gas facilities
- Strengthen troubleshooting and operational decision-making skills

Target Audience

- Field engineers
- Process engineers
- Production engineers
- Operations supervisors
- Gas plant operators
- Maintenance engineers

Course content

Target Audience

• Oil and gas professionals involved in gas processing facilities

Target Competencies

• Natural gas processing

• Gas conditioning systems

• Process optimization

• Gas dehydration and sweetening

• Process troubleshooting

• Operational safety

• Plant performance monitoring

• Engineering problem-solving

Course outline

Day 1: Fundamentals of Natural Gas Processing

• Understanding natural gas production, processing, and field operations

• Reviewing the physical and chemical properties of natural gas

• Understanding gas production systems and multiphase flow behavior

• Identifying common gas contaminants and their operational impacts

• Evaluating gas quality specifications, heating value, and commercial requirements

• Reviewing natural gas liquids, liquefied petroleum gas, and gas-to-liquids processes

• Understanding plant startup procedures and operating conditions under normal and abnormal scenarios

Day 2: Gas Separation Systems and Process Instrumentation

• Understanding the principles of gas-liquid separation in processing facilities

Course content

Course outline

- Reviewing separator configurations and selection criteria for field applications
- Evaluating key operating parameters affecting separator performance
- Understanding instrumentation, control systems, and process monitoring techniques
- Applying control valves, actuators, and measurement systems in gas processing operations
- Integrating automation and process control into daily plant operations
- Planning safe startup, shutdown, and operational activities

Day 3: Gas Contaminant Management and Hydrate Prevention

- Understanding mercury contamination sources and operational risks
- Reviewing technologies for mercury removal and process protection
- Understanding hydrate formation mechanisms and operating conditions
- Applying hydrate prevention and mitigation strategies during gas processing
- Estimating water content and controlling hydrocarbon dew points
- Reviewing the principles and applications of gas dehydration technologies

Day 4: Gas Dehydration and Natural Gas Liquids Recovery

- Understanding glycol dehydration processes and system operation
- Reviewing the function of major dehydration equipment and process flow arrangements
- Identifying operating conditions that affect dehydration performance and efficiency
- Troubleshooting common operational problems within glycol dehydration units
- Understanding heavy hydrocarbon recovery and refrigeration processes
- Reviewing condensate stabilization techniques and cryogenic processing fundamentals
- Understanding natural gas liquids recovery and product optimization strategies

Day 5: Gas Sweetening, Troubleshooting, and Operational Excellence

Course content

Course outline

• Understanding acid gas removal principles and gas quality requirements

• Reviewing amine treating systems, membrane technologies, and gas sweetening processes

• Applying structured troubleshooting techniques to gas processing operations

• Managing abnormal operating conditions and process upsets effectively

• Understanding operational risk management within gas processing facilities

• Evaluating the impact of maintenance activities on plant reliability and performance

• Applying environmental protection, process safety, and quality management principles

• Final workshop: Integrated gas processing case studies, troubleshooting exercises, and operational best practices

Seminar dates

Available seminar dates

Live dates and pricing for Efficient Gas Processing and Conditioning for Field Engineers generated from the course details page.

Date	Location	Format	Fee
Dates on request	Venue on request	Classroom	**Contact us**

Live online option	Online delivery is available at €1,850.-.