Comprehensive LNG and Natural Gas Processing Technology Training Course

20 - 24 Apr 2026

Vienna

5700 € (Per Person)

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Course Introduction / Overview:

Natural gas and liquefied natural gas (LNG) are central to the global energy mix, acting as crucial transition fuels. The complexities involved in processing, transporting, and storing these resources require a deep technical understanding and expertise. This comprehensive training course, provided by BIG BEN Training Center, is designed to give professionals a complete overview of natural gas processing and LNG technology. We begin with the fundamental properties of natural gas and the importance of conditioning it for various uses. The curriculum then moves through the entire processing chain, from gas sweetening and dehydration to liquefaction and legislation. We also cover the engineering principles, operational procedures, and safety protocols necessary for efficient and reliable operations. The course draws on the work of leading authors in the field, such as Bob D. Johnson and his book, Fundamentals of Natural Gas Processing. By exploring key technological innovations and operational challenges, this program gives participants a thorough understanding of the complexities and opportunities in this dynamic sector.

Target Audience / This training course is suitable for:

- Process engineers and chemical engineers.
- Operations and maintenance staff.
- Project managers in the oil and gas sector.
- Plant supervisors and technical managers.
- Researchers and academics in energy.
- Safety and environmental specialists.
- Analysts and consultants in the energy market.

Target Sectors and Industries:

- Natural gas processing and refining.
- Liquefied natural gas (LNG) production and regasification.
- Petrochemical and chemical manufacturing.
- Utilities and power generation.
- Government agencies and energy regulatory bodies.
- Consulting and engineering services.
- Upstream and midstream oil and gas.

Target Organizations Departments:

- Process engineering.
- Operations and maintenance.
- Health, safety, and environment (HSE).
- Research and development.
- Project management.
- Corporate strategy.
- Quality assurance.

Course Offerings:

By the end of this course, the participants will have able to:

- Understand the physical properties and composition of natural gas.
- Master the key processes of gas sweetening and dehydration.
- Explain the principles and technology of natural gas liquefaction.
- Identify and manage operational challenges in LNG plants.
- Apply safety standards and environmental regulations.
- Evaluate the economic and technical aspects of processing projects.
- Design a simplified process flow diagram for a gas processing unit.

Course Methodology:

This training course uses a blend of theoretical instruction and practical application to ensure a thorough understanding of natural gas and LNG processing. Our approach is hands-on and interactive, with sessions that include detailed lectures, collaborative workshops, and engaging group discussions. We use real-world case studies of successful and challenging processing projects to illustrate key concepts and best operational practices. Participants will engage in problem-solving exercises, where they will work together to troubleshoot common issues in a gas processing plant, from equipment failures to off-spec products. The program also uses process simulations to model different scenarios and their impact on plant efficiency. Our experienced instructors provide expert guidance and feedback, fostering a dynamic learning environment. BIG BEN Training Center is dedicated to providing a high-quality learning experience that is relevant to the day-to-day work of professionals in this specialized field.

Course Agenda (Course Units):

Unit One: Natural Gas Fundamentals Properties and Conditioning.

- Natural gas composition and specifications.
- Physical properties of hydrocarbons.
- Gas impurities and contaminants.
- Introduction to gas conditioning and treating.
- The importance of a natural gas value chain.
- Measurement and custody transfer.
- Flow assurance challenges.

Unit Two: Gas Processing Technologies Separation and Purification.

- Gas sweetening processes.
- Gas dehydration techniques.
- Hydrocarbon dew point control.
- NGL recovery and fractionation.
- Sulfur recovery units.
- Mercury removal.
- Gas quality and regulatory compliance.

Unit Three: Liquefied Natural Gas (LNG) Principles and Production.

- The liquefaction process and its purpose.
- Different liquefaction technologies.
- Main cryogenic heat exchangers.
- LNG storage and transportation.
- Regasification terminals.
- LNG bunkering and small-scale LNG.
- Economic and market overview of LNG.

Unit Four: Plant Operations and Equipment Safety and Optimization.

- Key equipment in gas processing plants.
- Process control and instrumentation.
- Operational challenges and troubleshooting.
- Emergency shutdown systems and procedures.
- Risk assessment and hazard analysis.
- Maintenance strategies.
- Energy efficiency in processing plants.

Unit Five: Case Studies and Project Applications Real-World Scenarios.

- A case study of a gas processing facility.
- A case study of an LNG plant.
- Project development lifecycle.
- Regulatory framework and permits.
- Designing a simple process flow diagram.
- Environmental considerations.
- Future trends in gas processing.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each day session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How can the continuous optimization of gas processing technologies help the industry meet both increasing global energy demand and stringent environmental regulations?

What unique qualities does this course offer compared to other courses?

This training course is designed to provide a cohesive, end-to-end perspective on both natural gas processing and LNG technology, which is a rare combination. Unlike other programs that focus on isolated aspects, we connect the entire value chain from initial purification to final liquefaction and legislation. Our curriculum is grounded in real-world applications and uses a wide array of case studies to give participants a practical understanding of operational challenges and best practices. We go beyond theoretical principles to cover the engineering, safety, and business aspects of plant operations. This holistic approach ensures that participants can effectively manage the complexities of modern gas and LNG projects. Our program equips professionals with a detailed, practical knowledge base that is immediately applicable to their roles.