Global Horizon
TRAINING CENTER

Training Course:
Design and Simulation of Gas Distribution Networks

25 - 29 October 2026
Istanbul (Turkey)
DoubleTree by Hilton Istanbul Esentepe

Training Course:
Design and Simulation of Gas Distribution Networks

Training Course code: EN236405 From: 25 - 29 October 2026 Venue: Istanbul (Turkey) - DoubleTree by Hilton Istanbul Esentepe Training Course Fees: 6825 Euro

Introduction

The Design and Simulation of Gas Distribution Networks training program is designed by Global Horizon Training Center to equip engineers and technical professionals with the essential knowledge and practical methodologies required to plan, design, analyze, and simulate modern gas distribution systems.

As gas networks expand to meet increasing urban, industrial, and commercial demand, accurate design and simulation have become critical to ensuring safety, reliability, efficiency, and regulatory compliance. This program provides a structured approach covering network components, hydraulic principles, demand forecasting, pressure management, and advanced simulation techniques using industry best practices.

Participants will gain a deep understanding of how to model real-world gas distribution networks, evaluate operational scenarios, optimize system performance, and support informed engineering and investment decisions.

Objectives

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

- Understand the fundamentals and components of gas distribution networks
- Apply engineering principles to the design of low-, medium-, and high-pressure gas networks
- Analyze gas flow behavior, pressure losses, and demand patterns
- Design compliant and safe gas distribution layouts
- Use simulation methodologies to model, evaluate, and optimize network performance
- Assess operational scenarios, expansions, and emergency conditions
- Support decision-making through accurate technical analysis and simulation results

Target Audience

This program is designed for:

- Gas distribution and pipeline engineers

- Utility and infrastructure engineers
- Network planning and design specialists
- Mechanical and civil engineers working in gas systems
- Technical supervisors and project engineers
- Professionals involved in gas infrastructure planning, operation, or expansion

Outline

Day 1: Fundamentals of Gas Distribution Networks

- Overview of gas distribution systems and applications
- Types of gas networks: transmission vs. distribution
- Network components: pipelines, valves, regulators, meters, and stations
- Gas properties and behavior in distribution systems
- Safety principles and design considerations
- Introduction to applicable codes, standards, and regulations

Day 2: Gas Network Design Principles

- Design criteria for low-, medium-, and high-pressure networks
- Pipe sizing methodologies and material selection
- Pressure class selection and network zoning
- Load estimation and demand analysis
- Network layout planning and routing strategies
- Design constraints and environmental considerations

Day 3: Hydraulic Analysis and Network Calculations

- Gas flow equations and pressure drop calculations
- Steady-state and peak demand analysis

- Velocity limits and operational constraints
- Line pack concepts and capacity analysis
- Balancing network efficiency and safety
- Common design challenges and engineering solutions

Day 4: Simulation Concepts and Network Modeling

- Role of simulation in gas network design and operation
- Building a network model: nodes, pipes, and boundary conditions
- Input data preparation and validation
- Scenario analysis: peak load, expansion, and contingency cases
- Interpreting simulation outputs and performance indicators
- Using simulation results for design optimization

Day 5: Optimization, Operations, and Future Planning

- Network optimization techniques and pressure management
- Integration of new customers and network expansions
- Emergency scenarios and operational resilience
- Maintenance planning and system reliability analysis
- Best practices in documentation and design reporting
- Final case study: end-to-end design and simulation review.

Registration form on the Training Course: Design and Simulation of Gas Distribution Networks

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Company Information

Company Name: .....
Address: .....
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Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
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Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
- ☐ Please invoice me
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Easy Ways To Register

Telephone: +201095004484 to provisionally reserve your place.	Fax your completed registration form to: +20233379764	E-mail to us : info@gh4t.com or training@gh4t.com	Complete & return the booking form with cheque to:Global Horizon 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt.