



*Training Course:  
Design of Distribution Networks and Load  
Growth Estimation*

*19 - 30 July 2026  
Dubai (UAE)*

## Training Course: Design of Distribution Networks and Load Growth Estimation

Training Course code: EN235694 From: 19 - 30 July 2026 Venue: Dubai (UAE) - Training Course Fees: 9240 € Euro

### Introduction

Electrical distribution networks are essential for delivering power from substations to end users efficiently, reliably, and safely. With increasing demand, urban expansion, and integration of renewable energy, accurate network design and load growth estimation have become critical for long-term planning and operational stability.

This 10-day advanced training program, developed by Global Horizon Training Center, provides a comprehensive approach to the design of electrical distribution systems and forecasting future load demand. It integrates engineering principles, planning methodologies, and practical tools to support efficient and scalable network development.

Participants will gain the knowledge and skills required to design robust distribution networks, analyze load requirements, and plan for future growth while ensuring system reliability and cost-effectiveness.

### Course Objectives

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

- Understand distribution system structures and components
- Design electrical distribution networks radial, ring, mesh
- Perform load calculations and demand analysis
- Estimate future load growth using forecasting techniques
- Apply voltage regulation and loss minimization strategies
- Integrate distributed generation and renewable energy
- Ensure system reliability, safety, and compliance
- Optimize network performance and expansion planning

### Target Audience

- Electrical and Power Engineers
- Distribution and Utility Engineers
- Planning and Design Engineers
- Energy and Infrastructure Professionals
- Consultants and Technical Specialists

### Outline

#### Day 1: Fundamentals of Distribution Systems

- Overview of power distribution networks
- Components feeders, transformers, switchgear
- Voltage levels and configurations
- Distribution system classifications

#### Day 2: Network Topologies and Design Concepts

- Radial, ring, and mesh systems
- Design criteria and standards
- Reliability and redundancy considerations
- Urban vs rural network design

#### Day 3: Load Characteristics and Demand Analysis

- Types of electrical loads
- Load profiles and diversity factors
- Demand and load factor calculations
- Peak load estimation

#### Day 4: Load Flow and Voltage Regulation

- Load flow analysis basics
- Voltage drop calculations
- Reactive power and power factor correction
- Voltage control methods

#### Day 5: Distribution Equipment Selection

- Transformers and sizing
- Cable and conductor selection
- Protection devices and coordination
- Switchgear and network components

#### Day 6: Loss Reduction and Efficiency Optimization

- Technical and non-technical losses
- Energy efficiency techniques
- Network reconfiguration
- Capacitor placement

#### Day 7: Load Growth Estimation Techniques

- Forecasting methods trend analysis, regression, AI basics
- Demand growth models
- Impact of urban development and industrialization
- Scenario-based forecasting

#### Day 8: Integration of Renewable Energy and Distributed Generation

- Solar and wind integration

- Distributed energy resources DER
- Smart grids and energy storage
- Grid stability considerations

#### Day 9: Reliability, Safety, and Standards

- Reliability indices SAIDI, SAIFI
- Fault analysis and protection coordination
- Safety standards and regulations
- Compliance with IEC/IEEE

#### Day 10: Integrated Network Design & Final Workshop

- Designing a complete distribution network
- Load forecasting and expansion planning
- Cost analysis and optimization
- Case study and group project
- Final review and evaluation

## Registration form on the Training Course: Design of Distribution Networks and Load Growth Estimation

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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: .....  
 City / Country: .....

### Person Responsible for Training and Development

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

### Payment Method

- Please find enclosed a cheque made payable to Global Horizon
- Please invoice me
- Please invoice my company

### 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  
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