



Consulting and Training | Reach New Heights

Course Name

Overhead Transmission Lines Inspection & Maintenance Techniques

Sector Name

Electrical Engineering

Document Type

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Overhead Transmission Lines Inspection & Maintenance Techniques

Course Introduction

Overhead Transmission Lines Inspection & Maintenance Techniques Course

Ensuring Power Sustainability and Grid Efficiency with Boost Vocational Training

Overhead transmission lines represent the main arteries of the electrical grid, and ensuring their efficient operation is the greatest challenge for power companies. In the 2026 work environment, traditional maintenance is no longer sufficient; therefore, the Overhead Transmission Lines Inspection & Maintenance Techniques course from Boost offers the latest international methodologies to ensure grid stability and reduce technical losses and sudden failures.



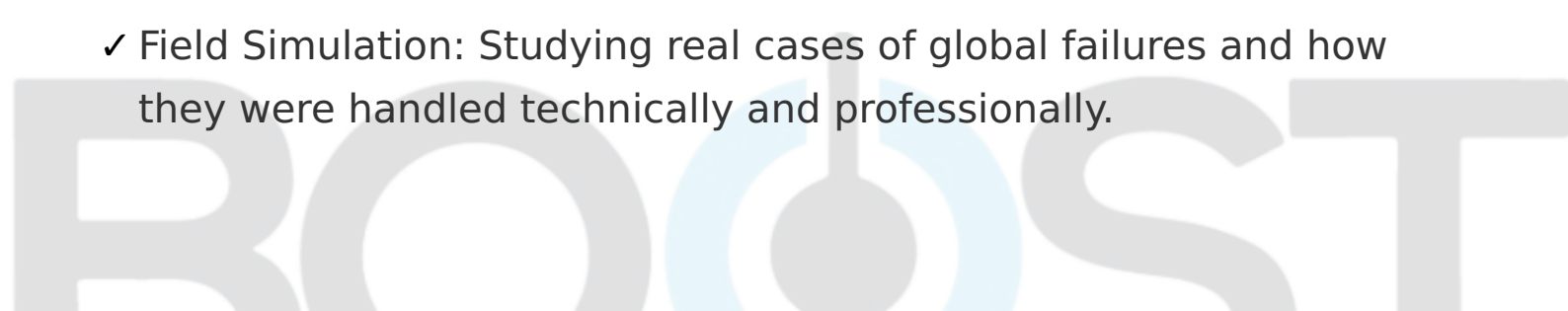
Why choose the "Overhead Transmission Lines Inspection & Maintenance" course with Boost?

Boost provides electrical engineers and technicians with the necessary skills to deal with the complexities of modern networks:

- ✓ **Advanced Inspection Techniques:** Training on using thermal cameras (Infrared) and "Corona" cameras to detect electrical discharge and hotspots before failure occurs.
- ✓ **Preventive and Predictive Maintenance:** Shifting from a "repairing the fault" policy to "predicting the fault" based on field data analysis.
- ✓ **Safety at Heights:** Strict focus on Occupational Health and Safety (HSE) standards for working on transmission towers.
- ✓ **2026 Tools:** Integrating inspection techniques via Drones and how to analyze the resulting images.

Features of the (Overhead Transmission Lines Inspection & Maintenance) Course from Boost Platform

- ✓ It helps international network experts lead international electrical interconnection projects and maintain high and extra-high voltage networks.
- ✓ **Focus on Return on Investment:** Reducing the costs of major repairs through smart periodic maintenance programs.
- ✓ **Field Simulation:** Studying real cases of global failures and how they were handled technically and professionally.



Benefits of the Course for the Organization

- ✓ Raising network reliability and reducing unplanned outages.
- ✓ Training the team on accurate fault diagnosis and reducing waste in spare parts.
- ✓ Extending the lifespan of transmission towers and conductors through correct maintenance.

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Target Audience

- ✓ Electrical Design Engineer
- ✓ Electrical Engineer
- ✓ Electrical Project Engineer

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Learning Objectives

- ✓ Become familiar with the basic operation, behavior, and modeling of transmission lines.
- ✓ Determine conductor sag, tension, and mechanical forces on overhead structures
- ✓ Describe performance and economic factors relevant to the specification of wood, steel, and concrete poles and structural components
- ✓ Determine insulation levels and select insulators, lightning arresters, grounding, and other
- ✓ Components coordinated to provide acceptable lightning performance

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Course Outline

✓ DAY 01

Module (01) Introduction to Power System Engineering

- ✓ Overview of Generation, Transmission & Distribution of Electrical Power
- ✓ Layout of Transmission & Distribution System
- ✓ Choice of System Voltage & Frequency; Comparison between AC and DC Power Systems
- ✓ System units and parameters

Module (02) Balanced 3-Phase Voltages

- ✓ Basic Three-Phase Circuit Connections
- ✓ Basic Three-Phase Relationships
- ✓ Active power, reactive power, and apparent power in a 3-phase system
- ✓ Advantages of three-phase systems
- ✓ Unbalanced Three-Phase Systems

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Course Outline

✓ Day 02

Module (03) Inductance of Overhead Transmission Lines

- ✓ Transmission Line Conductors
- ✓ Inductance of a conductor due to internal and external flux linkages
- ✓ Inductance of a single-phase transmission line
- ✓ Flux linkages of a conductor in a group of conductors
- ✓ Inductance of a composite conductor
- ✓ Three-phase conductor with equilateral spacing, with the concept of transposition
- ✓ Inductance of a double circuit transmission line
- ✓ Inductance of a bundled conductor transmission line

Module (04) Capacitance of Overhead Transmission Lines

- ✓ Capacitance of a single-phase transmission line
- ✓ Capacitance of composite conductor;
- ✓ Capacitance of a double circuit transmission line
- ✓ Capacitance of a bundled conductor transmission line
- ✓ Capacitance of single & three-phase transmission line taking into account the effect of ground

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Course Outline

✓ Day 03

Module (05) Transmission Line Analysis

- ✓ Parameters of Transmission Line
- ✓ Classification of Transmission Lines
- ✓ Modeling and analysis of short, medium, and long transmission lines
- ✓ Generalized circuit constants
- ✓ Concept of SIL and propagation constant

Module (06) Traveling Waves on Transmission Lines

- ✓ Transient analysis of a transmission line
- ✓ Reflection & refraction at the junction of two lines
- ✓ Reflection at the short and open circuit end of the line
- ✓ Bewley lattice diagram.

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Course Outline

✓ Day 04

Module (07) T.L. Accessories and Function & Protection Philosophy

- ✓ The protection philosophy used to protect the power station system.
- ✓ Types of insulators and string efficiency.
- ✓ Types of accessories and function.
- ✓ Overhead TL, Underground TL.
- ✓ Transmission line types.
- ✓ Smith chart & solving microwave problems using the chart

Module (08) Overhead T.L Maintenance

- ✓ Power plant maintenance (preventive maintenance)
- ✓ Power factor: How to improve the power factor
- ✓ Why are we using high voltage in transmission lines instead of high Current?
- ✓ Mechanism of heat flow in cable
- ✓ DC and AC distribution
- ✓ Lockout & Tagout procedure during maintenance

Overhead Transmission Lines Inspection & Maintenance Techniques

Course Outline

✓ Day 05

Module (09) Overhead T.L. Maintenance Washing Procedures

- ✓ Solving TL problems, the Earthing system
- ✓ Live line insulator washing procedures for MV and HV power lines
- ✓ SCADA system to monitor
- ✓ Distribution plant, Voltage drop
- ✓ Reducing the power consumption
- ✓ Daily and weekly checks should be done in our systems
- ✓ Difference between turbines and generators
- ✓ What is the newest tech. In a power transmission system?

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Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
July 19, 2027	July 23, 2027	5 days	4950.00 \$	England , London
Dec. 28, 2026	Jan. 1, 2027	5 days	4250.00 \$	UAE , Dubai
March 15, 2027	March 19, 2027	5 days	4250.00 \$	UAE , Dubai
July 5, 2027	July 9, 2027	5 days	4250.00 \$	UAE , Dubai

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