

Scandinavian Academy
Training Center

Mobile | 00966536473335 : Mobile | 00966112695229 : Phone : 00966552365295
Email | info.en@scandinavianacademy.co Web site:https://scandinavianacademy.co/en :
Riyadh - Al Khaleej District - Sheikh Abdul Aziz Bin Abdul Rahman Bin Bishr Street - 13223 - Office No. 5 | P.O.BOX : 13224

Course: Electrical Power Systems for Non Engineers

Code	City	hotel	Start	End	price	Language - Hours
EE-794SA	Al Khobar	Hotel Meeting	2026-12-06	2026-12-10	12950 SR	En - 25

Introduction

This Electrical Power Systems for Non-Engineers is dedicated to non-engineers to understand the basic and operations of electrical power systems. Commencing with the conventional method of generation of electricity to the fundamentals of renewable energy electrical power generation. In the transmission and distribution of electrical power the functions of power transformers, circuit breakers, electric motors, and earthing systems. Safety and hazards of electricity are the focal points in all electrical installations

Basic single line diagram interpretation is essential for the understanding of the electrical installation power flow. The emphasis of alternating current (AC) systems will encompass the basic electrical units like voltage, current, power, power factor a frequency of a single-phase and three-phase systems. Maintenance culture complimented by standard testing and measuring instruments is essential to ensure the reliability and security of an electrical power system.

This training course will feature

- Generation, transmission, and distribution of electricity
- Types of AC single-phase and three-phase network systems
- Power and power factor in an AC system
- Protection devices in an electrical installation
- Electrical safety and electric shock hazards

What are the goals?

- Understand the generation, transmission, and distribution of electricity
- Analyze Grounding systems and electrical safety
- Determine Electric shock risks and arc flash hazards
- Have a better understanding of electrical faults and protective devices
- Familiarize with main electrical equipment like transformers, motors and circuit breakers

Who is this training course for?

- Mechanical engineering engineers
- Mechanical engineering technicians
- Safety officers
- Civil engineering personnel
- Administrative and management staff

Course Outline

Day One: The AC Network and Electric Shock Hazards:

- Generation, transmission and distribution of electricity single phase and three-phase
- Types of AC network, star and delta configurations
- Power, voltage, current, impedance and power factor
- Importance of network earthing systems
- Types of earthing systems
- Electrical safety and electric shock hazards

Day Two: Operation of Various Types of Electrical Protection Devices:

- Fuses for low voltage, medium voltage and high voltage
- Miniature circuit breaker (MCB) construction and operation principles
- Molded case circuit breaker (MCCB) construction and operations

- Air circuit breakers
- Vacuum circuit breakers
- SF6 circuit breakers

Day Three: Distribution Power Transformers and AC Motors:

- Construction and types of transformers
- Functionalities of the transformer components
- Transformer cooling systems
- Types of AC single phase motors
- Three-phase AC induction motors
- Starting methods of AC motors

Day Four: The Interpretation and Use of Drawings:

- Importance of electrical drawings
- Single line diagram symbols
- Interpretation of electrical drawings
- Tracing a single line diagram
- Identify the components in a single line diagram
- Design a single line diagram

Day Five: The Use of Common Test Equipment and Maintenance:

- Digital multi meter
- Insulation resistance tester
- Importance and significance of maintenance
- Maintenance strategies in an electrical installation
- Types of maintenance
- Wrap up and Q&A session

The Scandinavian Academy for Training Center adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training Center.

Program Timings: 9:00 AM to 2:00 PM

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.
- A closing ceremony on the final day to distribute certificates and celebrate participants achievements.
- **Note: All prices are exclusive of 15% Value Added Tax (VAT).**

Our Success Partners

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المملكة العربية السعودية - الرياض - حي الخليج - شارع الشيخ عبد العزيز بن عبد الرحمن بن بشر - 13223 - مكتب رقم 5
Riyadh - Al Khaleej District - Sheikh Abdul Aziz Bin Abdul Rahman Bin Bishr Street - 13223 - Office No. 5