

Scandinavian Academy
Training Center

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Riyadh - Al Khaleej District - Sheikh Abdul Aziz Bin Abdul Rahman Bin Bishr Street - 13223 - Office No. 5 | P.O.BOX : 13224

Course: Electrical Engineering Practices for Facilities Personnel

Code	City	hotel	Start	End	price	Language - Hours
EE-642SA	Jeddah	Hotel Meeting Room	2027-08-01	2027-08-05	12950 SR	En - 25

Course Description

This course applies Electrical Engineering principles to oil and gas facilities design and operation and requires some prior experience. Electrical Engineering principles are reinforced through the use of individual and team problem solving exercises, one-line diagram coordination, interpretation, and class discussions of interfaces between facilities engineers, contractors and maintenance personnel.

Participants gain additional understanding of electrical equipment requirements for facilities and what is important to the Electrical discipline.

Course Objectives

- Key principles in project management for electrical projects including basics, front end loading, scope definition, brown-field vs. green-field, engineering deliverables, roles and responsibilities,
  project planning, risk analysis and management, cost estimating, and procurement, construction, contractor and supplier management
- Standards and recommended practices through an introduction to ANSI, API, CSA, CFR, IEC, IEEE, IES, ISA, NEMA, NFPA, AND UL
- Electrical distribution systems including background, planning, voltage selection, and system protection
- How to select, maintain and control DC and AC motors
- The characteristics, properties, insulation, shielding, jacketing, short circuit capabilities, and references of wires and cables

- Transformers which include operation, models, types, components, turns and voltage ratios, connections, losses, efficiency, ratings, application, selection, and safety
- Medium and low voltage switchgear and motor control centers including specifications, maintenance, and distribution
- Topics in faults and circuit protection including sensing devices, fuses, direct tripping devices, protective relaying, relaying schemes, major equipment protection, and system relay coordination
- Distribution, construction, fuses, circuit breakers, disconnects, grounding, types, and ratings of switchboards and panels
- The systems and requirements of uninterruptible power supply (UPS) and emergency power in addition to an overview of generator set, ATSs, and batteries
- Fault protection, system grounding philosophy, ungrounded systems, grounded systems, bonding, ignition sources, bonding techniques, separately derived systems, performance, and substation grounding
- About North American and International classifications of hazardous areas in addition to NEC and IEC comparisons, extension of zones, equipment certification, and equipment protection methods

Course Outline

- Electrical project management
- Standards and recommended practices
- Distribution systems
- Motors
- Wire and cable
- Transformers
- Switchgear
- Motor control centers
- Switchboards and panels
- Electrical faults (short circuits) and circuit protection
- UPS and emergency power

- Electrical system ground and bonding
- Hazardous area classification

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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