

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 Installations & Maintenance: Design, Inspection_Testing, Maintenance and Resilience

| Code | City | hotel | Start | End | price | Language - Hours |
|---|---|---|---|---|---|---|
| EE-552SA | Al Baha | Hotel Meeting | 2027-03-21 | 2027-03-25 | 13950 SR | En - 25 |

## Introduction

The electrical designer, installer and maintenance team are all expected to provide an installation that is safe, cost effective and reliable throughout its lifetime.

The course begins with the fundamental principles that always apply to ensure safety, the course then progresses through basic design procedures, inspection, testing and maintenance requirements, concluding with a review of power quality problems that affect the reliability of an installation where high technology interfaces with a supply.

**The seminar will provide an understanding of:**

- The initial assessment of an installation prior to the design
- Selection of protective devices
- Cable sizing and installation
- Inspection and testing procedures
- The maintenance requirements

## Seminar Objectives

**The delegate will gain detailed appreciation of:**

- The safety factors required by national and international standards
- The functional considerations that a designer has to take into account

- How new technology can impact on the design particularly power quality
- Safety requirements during installation, inspection and testing
- Inspection and testing techniques that affect the maintenance requirements
- How to improve productivity by improving the reliability of an installation

## Training Methodology

The seminar is conducted as modular lectures with encouragement for the delegate to interact. Case studies are included to illustrate how problems can develop as technology changes.

A design project is included to enable the delegate to practice the techniques of calculating the parameters of loads, protective devices and cable sizing for safety and functional purposes. A calculator will be required for this phase of the course.

Questions are welcomed throughout the course and during break sessions.

## Organisational Impact

- The additional knowledge will help in the design of new electrical installations
- This knowledge will help in upgrading an existing installation when new technology is to be added
- The course will help an organisation to improve its effectiveness in ensuring compliance with standards
- Knowledge of the impact of new technology will help in ensuring reliability of an installation
- Knowledge of the design implications to withstand failures due to power quality
- How inspection, testing and maintenance improve the resilience of an installation

## Personal Impact

**On successful completion of this course, delegates will understand:**

- The basis for safety and functional design
- How to assess the characteristics needed to commence a design process
- The earthing and bonding requirements of an installation for safety and function
- How new technology impacts on new and existing electrical installations
- Inspection and testing techniques that affect the maintenance routine of an installation
- How to improve productivity by improving power quality

## Who Should Attend?

**This course is aimed at personnel who would like to expand their knowledge of the safety and functional design of an electrical installation and is aimed at:**

- Mechanical and Electrical engineers
- Mechanical and Electrical technicians
- Electricians and Electrical Supervisors
- Maintenance personnel with responsibility for an electrical installation

## Programme Outline

**Day 1 – Preliminary Design Requirements**

**The design process requires consideration of the installation requirements with respect to the load characteristics, the circuit arrangements, and the source of supply.**

- Building services
- Purpose of an installation
- Cables
- External influences
- Transformers
- Compatibility
- Protective devices
- Maintainability

**Day 2 – Design Characteristics**

**To enable work to begin on any electrical installation a detailed specification is required. This specification will be based on the safety and functional requirements considered in day 1.**

- Electrical safety
- Cable installation
- IEC 60364
- Terminations
- Wiring regulations
- Inspection and testing
- Cable sizing
- Documentation

**Day 3 – Designing an Installation**

**Building on the first two days of the course this module puts into practice the theories developed.**

- Single phase design
- Power quality
- Three phase design
- Cable requirements
- Protective device selection
- Installation method
- Earthing and bonding
- Source of supply

**Day 4 – Commissioning and Testing**

**The requirements for any maintenance routine begin during the design process and continue though installation into operation. In many countries there is also a legal requirement to maintain an installation in a safe condition.**

- The need to maintain
- Test results
- What is maintenance
- Documentation
- Introduction to commissioning
- Harmonics
- Inspection
- Earth leakage

**Day 5 – Periodic Maintenance**

**After the initial verification of the safety and function of the installation it is necessary to ensure that safety remains effective throughout the lifetime of the installation.**

- Maintenance Planning
- Periodic inspection
- Equipment reliability
- Complex testing
- Categories of system
- Harmonic analysis
- Safety critical
- Records

**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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