

Training Title

ENGINEERING EXCELLENCE IN ELECTRICAL EQUIPMENT

Training Duration

5 days

Training Venue and Dates

Engineering Excellence in Electrical Equipment	5	08th to 12th September 2025	\$5,500	Dubai, UAE.
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Trainings will be conducted in any of the 4 or 5 star hotels.

Training Fees

- **5,500 US\$ per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch.**

Training Certificate

Prolific Consultants FZE Certificate of Course Completion will be issued to all attendees.

COURSE OVERVIEW

COURSE DESCRIPTION

Electrical equipment is the backbone of modern industrial and commercial infrastructure, ensuring reliable power distribution and continuity. This intensive 5-day course is designed to provide in-depth knowledge and practical skills in the engineering, operation, and maintenance of key electrical equipment: transformers, inverters, and uninterruptible power systems (UPS). Participants will gain a comprehensive understanding of the principles, design, and best practices required to achieve engineering excellence in these critical components.

COURSE OBJECTIVES:

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

- **Understand the fundamentals and operating principles of transformers, inverters, and UPS**
- **Learn best practices for the design, selection, and installation of electrical equipment**
- **Develop skills for effective maintenance, troubleshooting, and optimization of performance**
- **Explore the latest technological advancements and innovations in electrical equipment**
- **Ensure compliance with industry standards and safety regulations.**

SUITABLE FOR:

This Engineering Excellence in Electrical Equipment training course is suitable to a wide range of professionals but will greatly benefit:

- ✓ *Electrical Engineers and Technicians*
- ✓ *Maintenance Engineers and Supervisors*
- ✓ *Project Managers in Electrical Engineering*
- ✓ *Utility and Plant Engineers*
- ✓ *Technical Managers and Consultants*
- ✓ *Professionals involved in the design, operation, and maintenance of electrical equipment.*

TRAINING METHODOLOGY:

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course. Very useful Course Materials will be given.

COURSE OUTLINE :-

Day One:

- *Fundamentals of Electrical Equipment*
- *Course Introduction and Objectives*

Introduction to Electrical Equipment

- *Overview of transformers, inverters, and UPS*
- *Key components and their functions*

Electrical Principles and Safety Standards

- *Basic electrical principles relevant to equipment operation*
- *Safety standards and regulatory compliance*

Day Two:

Transformers

Types and Applications of Transformers

- *Distribution, power, and specialty transformers*
- *Applications and selection criteria*

Design and Construction of Transformers

- *Core design and winding configurations*
- *Cooling methods and insulation*

Operation and Performance

- *Load characteristics and efficiency*
- *Losses and thermal performance*

Maintenance and Troubleshooting

- *Routine maintenance practices*
- *Common issues and diagnostic techniques*

Day Three:

Inverters

Types and Functions of Inverters

- *Overview of different types of inverters (grid-tied, off-grid, hybrid)*
- *Key functions and applications*

Design and Operational Principles

- *Basic inverter design and operation*
- *Power conversion and control strategies*

Performance Optimization

- *Efficiency improvement techniques*
- *Harmonics and power quality considerations*

Maintenance and Fault Diagnosis

- *Preventive maintenance procedures*
- *Identifying and troubleshooting faults*

Day Four:

Uninterruptible Power Systems (UPS)

Introduction to UPS Systems

- *Importance and applications of UPS*
- *Types of UPS systems (online, offline, line-interactive)*

Design and Configuration

- *Key components and design principles*
- *Battery systems and management*

Operation and Performance

- *Load handling and runtime considerations*
- *Efficiency and reliability*

Maintenance and Testing

- *Regular maintenance routines*
- *Testing and performance verification*

Day Five:

Integration and Advanced Topics

Integration of Electrical Equipment

- *Coordinating transformers, inverters, and UPS in power systems*
- *System design and load management*

Advanced Technologies and Innovations

- *Emerging trends in electrical equipment*
- *Smart grid integration and IoT applications*

Case Studies and Best Practices

- *Real-world examples and lessons learned*
- *Best practices for achieving engineering excellence*

Workshop and Practical Exercises

- *Hands-on exercises and problem-solving*
- *Developing maintenance and optimization plans*

Case Studies, Last Day Review, Discussions & Pre & Post Assessments will be carried out.

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