

TRAINING TITLE

MAINTENANCE AND INSPECTION OF ELECTRICAL AND INSTRUMENTATION EQUIPMENT

Training Duration

5 days

Training Venue and Dates

Ref. No. EE098	Maintenance and Inspection of Electrical and Instrumentation Equipment	5	12-16 May 2025	\$5,500	DUBAI, UAE
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In any of the 4 or 5-star hotels. The exact venue will be informed later.

Training Fees

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

Training Certificate

Define Management Consultants Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

The course covers a wide range of topics, including electrical systems, instrumentation, automation, and control systems. Participants will learn how to effectively maintain, inspect, and troubleshoot electrical and instrumentation devices to ensure system reliability, optimal performance, and safety in operation. The training will include both theoretical concepts and practical applications, using real-world case studies and hands-on activities to reinforce learning. Participants will gain insights into modern maintenance strategies such as preventive, predictive, and corrective maintenance, as well as the best practices for E&I equipment operation and troubleshooting.

TRAINING OBJECTIVES

By end of course participants will be able to understand

- Understand the principles of electrical and instrumentation systems, their components, and their roles in industrial operations.
- Perform routine maintenance tasks on electrical and instrumentation equipment to ensure optimal performance and longevity.

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- Inspect and troubleshoot faults in electrical and instrumentation systems, using appropriate tools and techniques.
- Implement preventive maintenance practices and schedules to reduce downtime and improve equipment reliability.
- Understand calibration and testing techniques for instrumentation devices.
- Apply safety standards in the maintenance, operation, and inspection of electrical and instrumentation equipment.
- Interpret industry regulations and standards related to electrical and instrumentation equipment maintenance (e.g., IEC, NFPA).
- Evaluate the performance of automation and control systems and make necessary adjustments.

WHO SHOULD ATTEND?

- Electrical Engineers and Technicians
- Instrumentation Engineers
- Maintenance Supervisors
- Operators
- Safety Officers
- Project Managers

COURSE PROGRAM

Day 1: Introduction to Electrical and Instrumentation Systems

- Overview of electrical and instrumentation systems in industrial settings.
- Components of electrical systems: power distribution, transformers, generators, and circuit breakers.
- Components of instrumentation systems: sensors, transmitters, controllers, and actuators. www.definettraining.com
- Basics of electrical power generation and distribution.
- Understanding the role of automation in electrical and instrumentation systems.
- Signal types (analog, digital, and pneumatic) used in instrumentation.
- Industry standards and regulations for electrical and instrumentation systems (e.g., IEC, NFPA).

Day 2: Maintenance Practices for Electrical Equipment

- Preventive maintenance for electrical systems: techniques and schedules.
- Maintenance of motors, transformers, circuit breakers, and panels.

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- Troubleshooting electrical equipment: common faults and repair strategies.
- Thermal imaging and vibration analysis in electrical equipment maintenance.
- Inspection techniques for electrical equipment.

Day 3: Maintenance and Calibration of Instrumentation

- Calibration and testing of instrumentation equipment: importance and techniques.
- Maintenance of pressure, flow, temperature, and level instruments.
- Loop checks and calibrations for controllers, transmitters, and sensors.
- Troubleshooting instrumentation faults: identification and solutions.

Day 4: Automation, Control Systems, and Troubleshooting

- Overview of control systems: PLCs, SCADA, DCS, and their role in automation.
- Routine maintenance of control systems and instrumentation interfaces.
- Identifying and diagnosing faults in control systems.
- Troubleshooting techniques for PLCs and SCADA systems.
- Preventive maintenance for control systems to ensure smooth operation.

Day 5: Safety, Regulations, and Final Review

- Safety protocols for electrical and instrumentation maintenance (lockout/tagout, PPE, etc.).
- Electrical safety standards: NFPA 70E and IEC 60364.
- Best practices for maintaining safe working environments around electrical and instrumentation equipment.
- Review of key concepts learned throughout the course.
- Q&A and course wrap-up.

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NOTE:

Pre- & Post Tests will be conducted.

Case Studies, Group Exercises, Group Discussions, Last Day reviews, and assessments will be carried out.

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