XCELERATE TRAINING INSTITUTE

your learning & development partner

ELECTRICAL ENGINEERING

# Installation, Maintenance and Safety of Electrical Equipment in Hazardous Areas Training Course

| DURATION | LANGUAGE | FORMAT |
|---|---|---|
| 10 days | English | Classroom / Online |

## Upcoming dates

| Dates | Venue | Format | Fee |
|---|---|---|---|
| 4 – 15 ????? 2027 | Amman | Classroom | €8?250 |
| 28 ????? – 9 ????? 2027 | Live online | Online (live) | €1?800 |
| 6 – 17 ?????? 2027 | Live online | Online (live) | €1?800 |

### Register or ask a question

Online: x8ti.com/course/installation-maintenance-and-safety-of-electrical-eq…

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# Installation, Maintenance and Safety of Electrical Equipment in Hazardous Areas Training Course

## Introduction

This course by Xcelerate Training Institute provides participants with insights into the hazards involved in using electrical equipment in potentially explosive environments. It is designed to equip you with the skills to understand how electrical systems are installed, maintained, and operated in industrial process plants and heavy industries, ensuring the safety of equipment in hazardous areas.

Why is this “Installation, Maintenance, and Safety of Electrical Equipment in Hazardous Areas” course essential, especially for those in the electrical industry? Designing, installing, and operating explosion-proof systems can be expensive, but managing the consequences of failure is even costlier. Maintaining stringent standards can significantly reduce these costs while ensuring the safety of facilities and their inhabitants. This course covers the terminology, area classification, selection of explosion-protected electrical apparatus, and how protection is achieved and maintained in line with international requirements.

## Learning Objectives

Upon completing this course, participants will be able to:

- Define hazards, classify hazardous materials, understand risks, and eliminate sources of ignition.
- Prepare detailed documentation of hazardous areas.
- Understand the relationship between area classification and different types of apparatus.
- Learn about the installation and maintenance of various equipment types, such as flameproof and intrinsic safety devices.
- Understand safety requirements for workers and equipment in hazardous areas.
- Study the relationship between electrical equipment, gas groups, and temperature classes.
- Recognize the need for and approach to electrical equipment inspection.

## Training Methodology

This collaborative training program includes:

- Lectures
- Seminars & Presentations
- Group Discussions
- Assignments
- Case Studies & Functional Exercises Following the ‘Do-Review-Learn-Apply’ model.

## Benefits for Your Organisation

Organizations can benefit from:

- Staying ahead with a comprehensive overview of the installation, maintenance, and safety of electrical equipment in hazardous areas.

- Gaining confidence in handling the installation, maintenance, and safety of such equipment.
- Acquiring practical knowledge for a competitive edge in the workplace.
- Engaging in conversation-based sessions for networking and real-world learning.
- Participating in collaborative sessions for practical application in individual roles.

## Benefits for You

Participants will gain:

- Ability to carry out risk assessments for installation, maintenance, and safety of electrical equipment in hazardous areas.
- Updated knowledge of the latest trends and technologies in this field.
- Access to a tailor-made academic program for technicians or equivalent workforce.
- Training, assessment, and certification by experts in the domain.
- Skills to identify, act on, and report issues with electrical equipment in hazardous areas.
- Competence in performing test activities and site procedures.
- Knowledge of appropriate PPE tools and methods for compliance.
- Enhanced skills for further qualifications in this field.

## Who Should Attend

This course is ideal for:

- Apprentice Electricians
- Journeyman Electricians
- Project Professionals and Engineers
- Facilities Engineers
- Maintenance Technicians
- Electrical Supervisors/Managers
- Area Supervisors
- Master Electricians
- Process and Chemical Engineers
- Mechanical Engineers
- Project Supervisors
- Project Estimators

## Course Outline

### Area Classification

- Hazards and hazardous areas
- Properties of combustible and ignitable materials
- Basis of area classification
- Zonal classification
- Plant operations – normal and abnormal

- Policy and guidelines for implementation
- Area classification examples

## Design Philosophy and Selection of Equipment/Apparatus

- Risks
- Apparatus grouping
- Surface temperature classification
- Concepts and techniques of explosion protection
- Typical applications of protection methods
- Mixed techniques
- Selection of explosion-protection techniques for safeguarding

## Earthing

- Earthing and bonding
- Static electricity
- Clean and dirty earthing
- Electrical interference
- Earthing terminology

## Electrical Installations

- Installation requirements
- IEC standard contents
- Relevant installation standards and codes
- Safety documentation
- Practical aspects of IS installations
- Considerations affecting installation
- Additional installation issues

## Inspection and Maintenance

- Inspection and maintenance scope of IEC
- General requirements
- Inspections and insulation tests
- Maintenance
- Testing
- Earthing integrity verification
- Inspection requirements

## Safety, Earthing (Grounding), and Bonding in Hazardous Areas

- Electrical safety in industrial facilities
- Importance of earthing
- Earthing and bonding
- Network earthing
- Clean earth for instrumentation and controls

- Earth fault path and resistance measurement

## Electrical Protection and Instrument Control

- Importance of protection in apparatus and electrical installations
- Protection relays and instrument transformers
- Field measurement of physical parameters and associated control devices
- Programmable electronic systems
- Power system protection and coordination
- Hazardous area classification

## Reliability and Security of Electrical and Control Systems

- Power supplies: main, standby, backup, and emergency
- Modern uninterruptible power supply
- Standby diesel generators
- Redundancy in control networks and safety systems
- System security
- Denial of service
- Sabotage from external sources

## Safe Working Practices

- Safety observations
- Danger signals of electrical malfunctioning
- Need for inspection and maintenance
- Maintenance and safe practices
- Fault-finding – ensuring safety
- Insulation testing in hazardous areas
- Earthing in hazardous areas

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# Registration Form

## Installation, Maintenance and Safety of Electrical Equipment in Hazardous Areas Training Course

Preferred dates: ..... Venue or online: .....

Duration: 10 days Language: .....

Please complete and email this form to us, or register online. We confirm your place and send the invoice within one working day.

### Delegate information

Full name (Mr / Ms / Dr / Eng): .....

Position: ..... Telephone / mobile: .....

Official email: ..... Personal email: .....

### Company information

Company name: .....

Address: .....

City / country: ..... VAT / tax number: .....

### Person responsible for training & development

Full name (Mr / Ms / Dr / Eng): .....

Position: ..... Telephone / mobile: .....

Email: .....

### Payment

☐ Please invoice me ☐ Please invoice my company

Signature: ..... Date: .....

| Call | Email this form | Register online |
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