XCELERATE TRAINING INSTITUTE

your learning & development partner

ELECTRICAL ENGINEERING

Construction, Installation and Maintenance of a Transformer

DURATION	LANGUAGE	FORMAT
10 days	**English**	**Classroom / Online**

Upcoming dates

Dates	Venue	Format	Fee
17 – 28 May 2027	Live online	Online (live)	**€1,800**
22 Nov – 3 Dec 2027	Live online	Online (live)	**€1,800**
27 Dec 2027 – 7 Jan 2028	Dubai	Classroom	**€7,200**

Register or ask a question

Online: x8ti.com/course/construction-installation-and-maintenance-of-a-trans…

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Construction, Installation and Maintenance of a Transformer

Introduction

This training course by Xcelerate Training Institute delves into the design, operation, and maintenance of power transformers, focusing on safe and proper procedures. It explores the fundamentals of transformers, including magnetism and electromagnetism, and their role in power systems, regulations, and voltage conversions. Misuse, poor maintenance, and neglect of transformers can lead to significant losses for businesses and the environment. Therefore, this course emphasizes safe construction, installation, and maintenance practices, along with field diagnostics.

Learning Objectives

Upon completing this course, participants will be able to:

- Understand the basic functions of transformers.
- Identify different types of transformers and learn how to install and maintain them.
- Describe special transformers and their components and materials.
- Determine transformer cooling schedules, performance, and other factors.
- Diagnose transformer faults and apply appropriate protection and factory acceptance tests (FAT).
- Understand and calculate voltages and currents.
- Perform polarity tests on potential transformers.
- Professionally troubleshoot and examine power transformers.
- Discuss basic transformer concepts, including key electrical parameters, the role of transformers in power systems, principles, guidelines, and voltages.
- Efficiently install, test, and commission transformers.
- Conduct routine inspections and diagnostic assessments to extend transformer life expectancy.

Training Methodology

This interactive program includes various training methods:

- Lectures
- Case Studies
- Techniques
- Role Play
- Group Work
- Discussions
- Presentations Following the ‘Do-Review-Learn-Apply’ model.

Benefits for Your Organisation

Organizations can gain the following benefits:

- Crisis aversion by equipping employees to prevent transformer-related issues.

- Increased competence through improved technical skills in transformer installation and maintenance.
- Broader insights from access to professional instructors and peer discussions.
- Less downtime from flexible training methods requiring minimal time away from work.
- Customizable content tailored to the organization's specific needs.

Benefits for You

Participants can benefit in the following ways:

- Gain substantial knowledge and confidence in transformer construction, installation, and maintenance.
- Anticipate and address challenges in transformer maintenance to prevent dangerous outcomes.
- Deep dive into technical details and master course topics.
- Engage in interactive lessons that connect you with instructors and peers for real-world learning.
- Enhance skills through practical case studies.
- Obtain a professional qualification at a competitive cost.

Who Should Attend

This course is beneficial for field technicians, engineers, supervisors, and anyone responsible for testing and maintaining power transformers. It is also suitable for those involved in the installation, operation, and preservation of power systems, including managers, safety workers, and anyone working near power generation, distribution, or diffusion systems.

Course Outline

Basic Concepts

- Electrical Parameters and Regulations
- Magnetism and Electromagnetism
- Lenz & Faraday's Theories
- Single and Three-phase Circuits
- Basic Transformer Theory
- Transformer Function in Power Systems
- Principles and Regulations
- Applications

Transformer Components

- Transformer Materials
- Cooling of Transformers
- Transformer Performance
- Vector Group
- Voltage Regulation
- Transformer Errors & Protection
- Types of Faults (Oil & Insulation, Windings, Overloads, Overheating)
- Types of Protections (Built-on, Differential, Overcurrent, Restricted Earth Fault, Overload, Fire)

- Surge Arresters
- Types of Tests (Factory Acceptance Tests (FAT), Type Tests, Routine Tests)

Applications

- Instrument Transformers
- Distribution Transformers
- Power Transformers
- Special Purpose Transformers

Accessories

- Overcurrent Protection
- Instrumentation
- Pressure Relief Devices
- Tap-Changers

Basic Transformers Theory

- DC and AC Power Circuits
- Reactive Circuits
- Principles of Transformers
- Three-Phase Power

Transformer Installation

- Installation & Testing
- Mountings (Floor Mounted, Pad-Mounted, Pole Mounted)
- Oil Preservation Basin
- Neutral Grounding
- Earthing and Bonding
- Transport and Management

Maintenance of Transformers

- Troubleshooting and Failures
- Maintenance Types (Small, Dry-Type, Liquid-Filled)
- Scheduled Inspections & Diagnostic Evaluation
- Precautionary Maintenance & Inspection
- Visual Inspection
- Power Factor Insulation Testing
- Transformer Turns Ratio (TTR)
- Insulation Resistance
- Insulation Power Factor
- Site Acceptance Tests (SAT)
- Oil Analysis & Trials

Safety and Electrical Equipment

- Electrical Dangers

- High Voltage Apparatus Safety
- Personal Protective Equipment (PPE)
- Electrical Safety Appraisal

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Registration Form

Construction, Installation and Maintenance of a Transformer

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: .....

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Email this form
info@x8ti.com

Register online
Open the course page