XCELERATE TRAINING INSTITUTE

your learning & development partner

ELECTRICAL ENGINEERING

# Electrical Transient Analysis Program (ETAP) on Circuits

| DURATION | LANGUAGE | FORMAT |
|---|---|---|
| 5 days | English | Classroom / Online |

## Upcoming dates

| Dates | Venue | Format | Fee |
|---|---|---|---|
| 4 – 8 ????? 2027 | Kuala Lumpur | Classroom | €5?500 |
| 28 ????? – 2 ????? 2027 | Live online | Online (live) | €1?200 |
| 6 – 10 ?????? 2027 | Live online | Online (live) | €1?200 |

### Register or ask a question

Online: staging.x8ti.com/course/electrical-transient-analysis-program-etap-o…

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# Electrical Transient Analysis Program (ETAP) on Circuits

## Introduction

Power system equipment must withstand not only its rated voltage but also short circuit voltages. A key issue related to voltages is arc flashing, which primarily relies on short circuit and relay coordination studies. ETAP (Electrical Transient Analysis Program) is a widely used software for power system analysis in various industries. This training course focuses on power system modeling and analysis using ETAP software to assess different power analysis models.

## Learning Objectives

Upon completing this course by Xcelerate Training Institute, participants will be able to:

- Understand the significance of power system modeling.
- Comprehend the need for short circuit current calculation.
- Perform manual short circuit calculations using simple methods.
- Analyze motor starting and acceleration.
- Determine switchgear breaking and making capacities.
- Recognize the importance of arc flashing and relay coordination studies for operational and safety purposes.
- Design S/S grid earthing using ETAP.
- Write test case simulations using ETAP software.
- Explore the extensive capabilities of ETAP Power Station.

## Training Methodology

This collaborative training program includes:

- Lectures
- Seminars and Presentations
- Group Discussions
- Assignments
- Case Studies and 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 Electrical Transient Analysis Program (ETAP) on circuits.
- Assisting technical committees in creating, publishing, and revising standards related to ETAP.
- Utilizing examples and case studies to illustrate and ensure the material's applicability to the organization.
- Gaining awareness and understanding of roles and responsibilities concerning ETAP.

## Benefits for You

Participants will gain:

- Awareness of the latest developments in ETAP by studying new literature and other sources.
- Access to a tailor-made academic program for technicians or equivalent workforce involved in ETAP.
- Training, assessment, and certification by experts in the ETAP domain.
- Opportunities to discuss and find solutions to issues encountered during their normal working activities.

## Who Should Attend

This course is suitable for:

- Current ETAP users seeking a refresher.
- New ETAP users.
- Power engineers looking to enhance their skills using ETAP.

## Course Outline

### Overview of ETAP

- Capabilities and Limitations of ETAP
- One-Line Diagram/One-Line View (OLV)
- Creating and merging revisions, presentations, and configurations
- Scenario, Study, and Project Wizards
- Crystal Reports and Customizations

### Elements of ETAP

- AC and DC Element Descriptions
- Load Modeling
- Electrical Systems Modeling and Fundamentals
- Load Flow (Balanced and Unbalanced) Analysis
- Load Flow and Cable Sizing

### Sizing & Fault Calculations

- Transformer Sizing
- Benefits of Calculated Short Circuit Currents
- Introduction to Fault Current Calculations
- Breaking and Making Currents
- Per Unit Systems
- Typical Values of Positive, Negative, and Zero Phase Sequence Impedances

### Perform Calculations Using Standard Techniques

- Manual Calculations of Isc by MVA Method
- Calculation of Isc by Impedance Method
- Calculation of Isc by Symmetrical Components

- Calculations as Defined and Recommended by IEC/ANSI Standards
- Fault Levels
- Switchgear/Fuse Rating
- Typical Cases for Switchgear Sizing
- Relay Coordination and Arc Flashing Studies

## Data Collection, Plotting & Modeling

- Data Collection Procedures
- Plotting Time/Current Curves
- Relay Coordination Intervals
- Equipment Damage Curves for Cables, Transformers
- System Modeling for Device Coordination Study
- ETAP Star (Device Coordination/Selectivity)

## Earthing & Acceleration Analysis

- System Earthing (Solid, Resistance, and Reactance or Ungrounded Systems)
- Substation Grounding Grid Design and Calculations
- Motor Parameter Estimation
- Motor Acceleration Analysis (Dynamic and Static)
- Test Simulation Cases using ETAP
- Course Evaluations and Summary

## Introduction to ETAP Software

- Introduction to ETAP Software
- Creating Single Line Diagrams in ETAP
- Adding Templates and Parameters to SLD

## Introduction to ETAP Software

- Load Flow Analysis
- Report Manager and Transformer Overloading
- Composite Network in ETAP
- Short Circuit Analysis
- Arc Flash Analysis

## Introduction to ETAP Software

- Motor Acceleration Static Study
- Motor Acceleration Study Dynamic
- Motor Acceleration Study with VFD

## Introduction to ETAP Software

- Cable Pulling System
- Cable Ampacity Calculation with Underground Raceway System

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# Registration Form

## Electrical Transient Analysis Program (ETAP) on Circuits

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

Duration: 5 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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