


Power Systems Electromagnetic Transient Simulations with PSCAD™ - Introduction & Applications

Language	Training date	Registration deadline	Schedule	Place	Cost/person (VAT not incl.)
	May 16-20, 2022	May 6, 2022	9:00am – 1:00pm	Online	1200 €

Course outline

This course covers the fundamental phenomena applied to the study of electromagnetic transients in power systems. During the course numerous areas of application are discussed, such as AC transients, faults and protections, saturation transformers, electrical machines and transmission lines, with practical examples that illustrate these applications. Several detailed analyzes will be conducted to highlight practical situations frequently encountered by engineers in this field.

Course attendees will work with different cases proposed in an interactive environment using the PSCAD simulation software. In addition, attendees will be able to request about different aspects or phenomena that concern them. No experience in PSCAD is required.

Who should attend

The course is mainly aimed at engineering students, design engineers and professionals interested in knowing modern tools for analyzing electromagnetic transient phenomena in power systems. The course is appropriate for new users of PSCAD.

Course schedule

MODULE 1: General Features

- Selection of simulation tools
- Typical studies in PSCAD
- Simulation theory
- Specifications

MODULE 2: First steps with PSCAD

- PSCAD step by step
- Create projects
- Access to the Master Library
- On-line help

MODULE 3: Plotting, metering and control devices

- Plotting curves
- How to export results
- Dynamic control devices
- Snapshots
- Multiple runs
- Variable parameters & parametric computations
- Control blocks & sequencers

MODULE 4: Breakers & Faults

- Breakers control
- Faults control

MODULE 5: Switching & Interpolation

- Semi-conductors models
- Interpolation method

MODULE 6: Transformers in PSCAD

- Classical models
- UMEC models
- Equivalent circuit
- Parameters
- Ideal model
- Representing saturation

MODULE 7: Rotating Machines in PSCAD

- Introduction to electric machines
- Initialization processes

MODULE 8: Transmission Lines & Cables in PSCAD

- Equivalent circuit models
- Travelling wave models

MODULE 9: User Components

- EMTDC structure and solving process
- How to create a component step by step
- Parameterizing a component
- Defining the code

MODULE 10: Organizing the Worksheet

- Creating page modules

MODULE 11: Blackboxing modules

- How to convert a module in a blackbox

MODULE 12: Automation with Python

- My first script in PSCAD