# Paladin Power Systems Modeling Essentials Training (Course #DB-103)

POWER ANALYTICS™

## About the Course:

A 3-day Paladin® DesignBase™ Training for industrial plant, utility, and consulting engineers with emphasis and effective solutions based on Paladin DesignBase Rev.5.0 release. By attending 3-days workshop, the attendees will learn:

- Paladin DesignBase 5.0 structure and new features;
- Managing the Paladin DesignBase 5.0 tools;
- Organizing a project and the project files: model layout management;
- Power Flow studies: scope, methods, input data, output report, organizing a power flow report and connecting the report to the Paladin DesignBase (formerly EDSA) project, voltage control, load analysis, simultaneous multiple motor starting, motor starting impact to the study network; dynamic individual motor starting,
- Short Circuit studies: scope, methods IEEE and IEC, input data, output report, organizing a short circuit report and connecting the report to the Paladin DesignBase project, protective device evaluation (PDE), sliding faults;
- PDC studies: scope, protection principles, PDC data base, protection coordination, input data, output report, organizing a PDC Report and connecting the Report and PDC curves to the Paladin DesignBase (EDSA) project; Arc Flash investigation; generic approach and trends.

Total Course Length: 24 hours (3 days)

## Why You Should Attend:

1. Understand basic concepts of power system analysis and operations
2. Understand how equipment characteristics and the installation configuration can affect the electrical software model
3. Understand the importance of arc flash calculations
4. Identify the important electrical characteristics to define a model
5. Develop an understanding of electrical network coordination principles

## Prerequisites:

- Basic knowledge of electrical circuits
- Power Systems experience a plus
- Prefer students bring individual laptop computer for class

## Agenda:

08:00 - 10:00 DesignBase Training
10:00 - 10:30 Break
10:30 - 12:00 DesignBase Training
12:00 - 13:00 Lunch & Break
13:00 - 15:00 DesignBase Training
15:00 - 15:30 Case Studies
15:30 - 16:00 Break
16:00 - 17:00 Open Workshop

## Day One

- Paladin DesignBase 5.0 – New Features and Functions;
- Modeling practices as outlined in IEEE-399 "Brown Book"
- Paladin DesignBase Graphique Interface :DesignBase 5.0 GUI;
- Catalog Management
- Single Line Diagram Setup
- Defining Scenarios
- Project Layout Management (*.axd, *.mas, *.epr. project files)
- Multiple Page Projects
- Multiple Drawings Project
- Multiple Drawings and Pages Project
- Electrical interconnection: multiple pages, multiple drawings projects
- Hyper-linking
- Hyper-linking to the Internet and other applications
- Input Data: Power Utility, Generator, Induction Motor, Steady State Load, UPS, XFMR data, Feeder Data, CB input Data, etc.;
- Back Annotation
- The Symbol Property Menu
- Customizing Single Line Diagrams
- Importing Drawings from AutoCAD and other applications
- Practical Exercises (Ex.1 project completion)
- Modeling UPS
- Load Flow Analysis
- Voltage Control (Transformer Taps & Reactive Power options)

## Day Two

- Local and Remote Voltage Control using ULTC's and SVC's
- Transformer Sizing using Load Flow Results
- Motor Starting Methods (standard, capacitor assisted, capacitor/reactor assisted)
- Motor Starting Analysis using the load flow methodology
- The Load Flow/Motor Starting Graphical Browser
- Scenario Voltage Profile analysis
- Practical Exercises
- 3 Phase Short Circuit Analysis based on IEEE Standards
- Standards and Analysis Options
- L-G, L-L, L-L-G and 3P reporting
- Short Circuit Reports
- Protective Device Evaluation and PDE Report

## Day Three

- Power System Protection
- Type of protections
- Protective Device Coordination Analysis; protective devices, IT (instrument transformers) coordination principles
- Practical Exercises; System provided in the class
- PDC Stand Alone and network base; managing Stand Alone PDC program
- PDC GUI based; new features and functions; managing the PDC GUI based
- Customizing and Exporting the Time Current Coordination Graph into Word documents
- Importing Motor Starting Curves from the Motor Torque and Performance Program
- Generator decrement curve
- Organizing a PDC report: layout and content
- Injection of Fault Currents and Tripping Time Evaluation
- Back annotation of PDC data on the one line diagram
- Arc Flash investigation; generic approach on Arc Flash projects

## Course Fees and Registration:

Please Contact Training@PowerAnalytics.com to reserve your spot!
(Accommodation information will be provided at time of registration) 9208 Falls of Neuse, Suite 215
Raleigh, NC 27615
919-848-6625

Paladin Power Systems Modeling Essentials Training Costs (Course #DB9 103) *Training rates:* $1,700 per student