About the Course:

Power Analytics' Advanced Power Systems Modeling course is a 3-day, hands-on workshop for graduates of Power Analytics Power Systems Basic Training and experienced Paladin® DesignBase™ users. By participating in the training, attendees will learn about:

- Advanced methodologies for power systems design;
- And short circuit analysis, protective device evaluation, transient analysis, and power quality investigation (i.e., harmonics analysis, voltage sag, switching transients, etc.)

Total Course Length: 24 hours

Benefits:

As a result of this course, you will be able to:

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 is a plus
- Individual laptops/computers for class are preferred

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

- Review System Modeling Concepts
- Review System Analysis: Per Unit Method, Symmetrical Components
- IEEE Standards
- Sub transient, Transient and Steady State Short Circuit Current
- Short Circuit Reports
- Circuit Duty, Switching Equipment Capabilities
- Protective Device Evaluation
- Numerical Examples
- Protective Device Coordination (PDC)
- Protection Principles
- Methods of Coordination
- Performing a PDC Study using Paladin DesignBase PDC Program
- Arc Flash Analysis
- Numerical Examples

Day Two

- Introduction to Power Quality
- Linear and Non-Linear Loads
- Harmonics Based Power Quality Investigation using Power Analytics
- Frequency Scan
- Transformers and K Factors
- Capacitors and Resonance
- The Harmonics Program Control Interface
- Modeling Harmonics Sources in Power Analytics
- Adding Filters (Manually, Auto Filter Sizing)
- Phase Shifting Transformers
- Generic Approach on Power Quality Investigation
- Practical Exercises
- Voltage Based Power Quality Investigation: Sags, Fluctuations

Day Three

- Steady State Models and Dynamic Models
- Generator Dynamic Models
- Motor Dynamic Models
- Governor Models
- AVR Models
- Modeling Disturbances in Paladin DesignBase Adv. Transient program
- Power Analytics Universal Logic Controller: Built Dynamic Models
- Practical Exercises: Bus Transfer, Plant Start-Up, Motor Sequencing, Dynamic Motor Starting; Faults, Voltage Sags, Modeling Relays, CBs, Fuses, etc.

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 Road, Suite 215

Raleigh, NC 27615

919-848-6625

Paladin Advanced Power Systems Modeling Training Costs (Course #DB-313) *Training rates:* $3,000 per student (valid through July 2015)