

**Jan 9-13, 2011****Tampa,  
Florida**

# POWER FLOW AND DYNAMIC SIMULATION ANALYSIS AND APPLICATIONS COURSE

## OVERVIEW

The power flow and dynamic simulations are two of the basic tools of power system analysis that is required knowledge for anyone who wants to work in this field. In this introductory course, we shall train you on the basic principles of power flow and stability analysis with emphasis on applications to practical power system analysis.

Learn how to model various types of power system equipment, and how the modeling of such equipment influence power flow solution performance and results. Learn about various methods for solving the power flow, the intrinsic characteristics and when to apply them, especially in ill-conditioned cases. Then apply the power flow to typical power system problems, including contingency analysis and transfer analysis.

Learn about dynamic simulation, the primary tool for assessing power system stability. Stability studies require a detailed representation of control

response from power system equipment in the millisecond to minutes timeframe. The time-domain dynamic simulation is the basic tool for stability assessment. We will introduce the basic concepts of stability and dynamic simulation and illustrate them through hands-on case studies.

Fill in your knowledge base of practical power flow and dynamic simulation analysis techniques and applications in a short course that is suited to today's needs.



## COURSE OUTLINE

### Day 1:

- Introduction and Review of Power Circuit Analysis
- Power System Modeling for Steady State Analysis
- Exercises on Reading, Changing and Checking-Power Flow Models

### Day 2:

- Power Flow Solutions Techniques
- Exercises in Power Flow Solutions
- Contingency Analysis
- Exercises in Contingency Analysis

### Day 3:

- Transfer Analysis
- Exercise on Transfer Analysis
- Overview of Dynamic Simulation and Power System Controls

- Modeling of Power System Controls

- Exercises on Assessing Dynamic Simulation

### Day 4:

- The Dynamic Simulation Process
- Exercises on Setting Up a Dynamic Simulation Case
- Simulating Contingencies

### Day 5

- Assessing Dynamic Simulation Results
- Exercise on Setting Up, Running and Evaluating Results of Contingencies



## WHY TAKE A PTERRA COURSE?

Pterra's short courses cover new and evolving technologies in power system engineering and analysis topics. The courses range from a day to 5 days of intensive, focused discussion on specific, timely topics. Some courses are lecture and discussion type while others include hands-on case studies to enhance learning on applications topics.

What makes taking courses at Pterra unique?

- **Experience** - Pterra's instructors talk from experience in practical applications for the particular topics they cover. As a minimum, Pterra's instructors have 10 years experience and 200 lecture hours in a classroom environment.
- **Convenience** - Pterra courses are held in locations where there is convenient access by road, train or air, at venues where there are numerous choices for lodging and meals.
- **Personal** - Pterra courses are aimed at smaller class sizes. The classroom atmosphere is casual, conducive for open discussions of technical issues.

For a very short time commitment from you, come away with the latest thinking on power technologies, and bring this directly to your area of application.

## F E E S

Registration fee for the course is \$1,175 per person. Participants are responsible for their own transportation and lodging. Participants may opt to bring a laptop with simulation software that they would use for the course.

The following discounts are available:

- For more than one participant from the same company, 15% discount if registering at the same time
- For early-birds, a 15% discount is offered if registration is completed on or before Nov 1, 2011.

The course is hosted by

**Florida Reliability Coordinating Council,  
1408 N. Westshore Blvd, Ste 1002,  
Tampa, FL 33607**

**Tel: 813-289-5644**

For Schedules and more info, *please visit us on the web at:*  
[www.pterra.com/training](http://www.pterra.com/training)

## COURSE FORMAT

The training is presented in a classroom format, using lectures, hands-on exercises and review tests.

In the lectures, concepts, methods and techniques for each learning objective are presented, with provisions for Q&A sessions to address specific questions. The exercises provide for a basis to apply the concepts in real-world simulation software, and interpret the results from a physical standpoint. The test reviews determine if there is sufficient retention of the course material to support the award of CE credits.

This course is presented over four and a half days with two sessions per day, except for the final day. Each session comprises of 3 classroom hours. Participants receive bound Course Notes which contain a copy of the material presented in the lectures, including supplementary reference material.

The exercises are presented with an overview and explanation of the sample system and provided data, a list of questions and space for the participants to enter responses, comments and additional notes.

Participants who wish to bring their own laptops with licensed analytical software may do so. Instructors can provide coaching for most software packages.

***Florida Residents:*** *The Florida Board of Professional Engineers will accept the continuing education credit hours towards a PE license upon submission of the course certificate.*

## T O R E G I S T E R

Please download a registration form at  
[www.pterra.com](http://www.pterra.com)

Or contact Pterra at:

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USA

Phone: 518-935-2579, Fax: 518-935-1066

E-mail: [csteuhl@pterra.us](mailto:csteuhl@pterra.us)

Please specify number of participants, name, company, address, telephone number, fax number and email contacts.

We accept all major credit cards and company checks. Payment at the venue will not be accepted.