

Distribution Engineering Fundamentals

2 ½ Days: November 7 – 9, 2017

Cincinnati, OH

What is this Course about?

Attendees will receive a broad overview of distribution engineering, analysis techniques, and a review of calculations used in making daily decisions. Practical concepts are emphasized to ensure sufficient understanding of the various components within the distribution systems. Real world problems are used to teach methods of calculation that are easily understood and put into practice. Graduate engineers consider this course excellent prep for the PE exam.

Who should attend?

Distribution engineering and technical personnel of any experience levels who desire a better understanding of the distribution system. New comers to electric distribution find this courses to be the 101 class they should have had to prepare them for the electric utility environment. The experienced veterans find it to be the perfect avenue to tie practice back to academic theory.

Continuing Education Credits

Attendees will receive a certificate for 18 Professional Development Hours (PDH) for each class they attend. UC Synergetic Courses have never been denied as continuing education by any state professional engineers board.

Instructor Bios:

Chris Sticht is a Senior Consultant for UC Synergetic. Mr. Sticht is a specialist in utility system planning, load analysis, planning software, underground, solar and Smart Grid. Chris has extensive background in planning, design, operations, and protection. His background includes work on transmission systems, distribution systems, substations, and commercial building electrical systems. He has managed teams of engineers, designers, and electricians. His experience includes consulting, contracting and work at two power flow software firms.

Jerry Josken is a Senior Consultant for UC Synergetic. Jerry holds a BS in Electrical Engineering Technology from the Milwaukee School of Engineering and a MBA from North Central College. During his 30+ year career with Eaton's Cooper Power Systems Jerry has served as Test Engineer, Design Engineer, Distribution Protection Engineer, and Field Application Engineer. Past leadership positions include Chair of IEEE Rural Electric Power Conference (2012) and GLEMS Distribution Equipment /Controls (2013-2014). Presently, Jerry coordinates UCS Training Programs.

Distribution Engineering Fundamentals Course Outline

Basic Electrical Theory

- Overview of Power Systems
- Impedance Modeling: R & X
- Electric Power Formulas
- Power Triangle
- Losses & Loss Reduction
 - Formulas
 - Loss Reduction Techniques

Steady State Analysis

- Voltage Profile Analysis
 - Voltage drop formula
 - Analysis process
- Capacitors & Regulators
 - Impacts
 - Location
 - Control settings & types
- Volt/VAR Management
 - Application Strategies
 - Demand vs. Energy Reduction
 - Techniques

Fault Analysis

- Fault Calculation Formulas
 - LLL, LL, LLG, LG
 - Fault Impedance
 - Asymmetrical & DC Offset

Transformer Basics

- Voltage Drop & Fault Impact
- Transformer Impedance
- Per Unit System
 - Base Quantities
 - Applications

Overcurrent Protection Essentials

- Protective Devices & Equipment
- Interpreting TCC Curves

Overvoltage Protection Essentials

- Protective Equipment
- Placement of devices

Reliability and Power Quality

- Reliability Indices
- Voltage Transient Analysis
- Flicker

Transformer Connections

- Y-Y, Y-D, D-Y, D-D
- Phase Shift
- Calculations

Miscellaneous Topics

- Distribution Engineering Practice
- Distribution Planning

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Course Location

This course will be held at the Holiday Inn Express and Suites

The street address is:

11160 Dowlin Dr.
Sharonville, OH 45241

Hotel

There is no block of room reserved at any hotel for this seminar.

Suggested hotels:

Holiday Inn Express
11160 Dowlin Drive
Sharonville, OH 45241
Phone: 513-771-9080

Hilton Garden Inn
11149 Dowlin Drive
Sharonville, OH 45241
Phone: 513-772-2837

Course Registration

The course tuition is **\$1,495 per person**. Tuition will include course materials, refreshments, and lunch on Tuesday and Wednesday.

Hotel accommodations, transportation and other incidentals will be the student's responsibility.

It is recommended students bring an engineering calculator to class.

Smart phones with scientific calculators would also be sufficient.

To register, please complete the attached registration form, or [click here](#).

Cancellations received after October 23, 2017 will receive a credit that can be used for tuition on a future UC Synergetic Course. The credit is good for one year and is transferable within the same company. In the unlikely case of course cancellation, UC Synergetic liability is limited to refund of the course registration fee only.

For additional information about this course, other UCS course offerings, or on-site pricing, please contact **Jerry Josken at (919) 348-3234** or via e-mail at: jjosken@ucseng.com.

Registration Form

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November 7-9, 2017 Cincinnati, OH

Payment methods:

By check, payable to **UC Synergetic, LLC** Please attach check to the registration and mail to the address below.

By credit card. *An electronic invoice will be sent to you via email**. This is a secure payment method through PayPal. It does not require a PayPal account.*

Check one:

___ Enclosed is a check in the amount of \$1,495.

___ Please my charge my credit card the amount of \$1,495.

CC info:

Circle One: VISA Master Card American Express Discover

CC number: _____ exp date: _____

Attendee information: (Attach additional sheets for multiple registrations)

Name: _____ Title: _____

Company: _____

Business address: _____

City: _____ State: _____ Zip: _____

Phone (preferably cellar): _____

Referred by: _____

For question regarding payment please contact:

Mail registration to:

Ms. Gail Horne
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123 North White Street
Fort Mills, SC 29715
phone: 803-835-7852
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