

Electric Distribution Circuit Design

2.5 Days, May 15 – 17, 2018

Raleigh, NC

What is this course about?

The objective for this course is to expose attendees to the process of designing and dealing with issues associated with distribution circuit construction, both overhead and underground. The curriculum references applicable NESC requirements and provides interpretation when necessary.

Who should attend?

Attendees should have some working knowledge of distribution feeders. Feeder design veterans, new designers and those with designer supervisory responsibilities will find this course very useful. Typical class attendees background range from professional engineers to electric distribution designers. Attendees should bring their own copy of the 2017 National Electric. The print edition is available at the [IEEE Standards Store](#).

Continuing Education Credit

Upon completion, attendees will receive a certificate for 18 Professional Development Hours (PDH). UC Synergetic Courses have ever been denied as continuing education by any state Professional Engineers Board

Instructor Bios:

Gary Roberts is a Professional Engineer with over 40 years' experience in the Electric Utility industry, 25 years plus with TXU, worked on international engagements and the past 11 years with UC Synergetic in various capacities. Gary is a graduate of the University of Texas at Arlington with a BSEE and a graduate of Southern Methodist University with an MBA. Gary is married, has two grown daughters and is active in his church and his community. He is a private pilot and has a small horse farm where he and his wife raise Appaloosa show horses. Gary has shown Appaloosa horses at World Class levels and has finished in the top ten multiple times.

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 chair of Great Lakes Electric Meter School Track 5 Distribution Equipment and Controls (2013-2014). Presently, Jerry coordinates UCS Training Programs.

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Course Outline

Course Introduction

Scope

- Intro of instructors and attendees

Electric Utility Basics

- Power System Description
- Definition of Electrical Terms/Electric Formulas
- Distribution Transformer Basics

NESC

- Organization, Structure
- Purpose and Scope (Section 200 & 201)
- Application of Rules (Section 202)

Electric Power Overhead Line Design

- NESC Section 24 - Grades of Construction
- NESC Section 25 & 26 - Loading for Grades B & C
- Poles – types & classifications
- Conductor
 - Sag & Tension
- Guys & anchors
 - Guying and Bracing
- Single Phase Overhead Design
- Conductor Sizing
- Transformers
 - CSP vs. externally fused
- Three Phase Overhead Design
- Easements
 - Preparation
 - Securing
- Conductor Sizing
- Transformers
- Re-conductoring

Electric Distribution Underground Design

- Overview of Electric Underground Distribution
- NESC Part 3 - Purpose, Scope and Definitions
- Conductor
- Cable Terminations
 - NESC Sec. 37
- Padmount Transformers
 - Radial vs. Loop
 - Features and Accessories
- Cable conduit Systems
 - NESC Sec. 32
- Direct Buried Cable
 - NESC Sec. 35
- Single and three phase Underground Lines
- Riser Pole Equipment
 - NESC Sec. 36
- Residential and Subdivision Design
- Commercial Design

Power Quality and System Protection Equipment

- Reliability
 - Outage frequency & minutes
- Overcurrent Protection
 - Overcurrent Devices
 - Sectionalizing Points
- Volt/VAR Equipment
 - Power Capacitor
 - Voltage Regulator
- Transient Overvoltage Protection

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Course Location

This course will be held at the Homewood Suites by Hilton.

The street address is:

Homewood Suites
5400 Homewood Banks Drive
Raleigh, NC 27612
Phone: 919-785-1131

Hotel

Recommended Hotel:

Homewood Suites
5400 Homewood Banks Drive
Raleigh, NC 27612
Phone: 919-785-1131

A block of rooms has been reserved for May 14, 2018 - May 17, 2018. The special room rate of \$124.00/night will be available until April 24th or until the group block is sold-out, whichever comes first. [Click here](#) to be forward to the reservation site.

Course Registration

The course tuition is **\$1,495 per person**. Tuition will include course materials, refreshments, and lunches. Hotel accommodations, transportation and other incidentals will be the student's responsibility.

To register, please complete the attached registration form or [click here](#) to be forwarded to our online registration site. Discount codes are available for current UC Synergetic clients, 4 or more attendees from the same organization, state and federal employees well as electrical engineering students and faculty. Contact Jerry Josken to present your qualification.

Cancellations received after April 30, 2018 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) 348-3432** or via e-mail at: jjosken@ucseng.com.



Registration Form
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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.*

Circle one: Enclosed is a check for /Please charge my credit card for \$1,495.00

Please Complete the Information Below:
(Attach additional sheets for multiple registrations)

Name: _____ Title: _____

E-mail** _____

**Please provide email address if you would like confirmation of your registration or would like to pay online through PayPal.

Company: _____

Telephone: _____

Address: _____

City: _____ State _____ Zip _____

Referred by: _____

Return complete form
to: Gail Horne
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Fort Mills, SC29715
Phone: (803) 835-7852
Email: ghorne@ucseng.com