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PDEC 500

Introduction to Distribution Systems and Power Circuit Analysis

Siemens Power Academy TD - NA • usa.siemens.com/pti-education

At a glance

The **Introduction to Distribution Systems and Power Circuit Analysis** course provides engineers with a fundamental understanding of the distribution systems and power system analysis. This is a great course for anyone who needs to better understand distribution system components, and the power circuit analysis techniques applicable to the identification of the distribution system limits and performance under normal and emergency conditions.

PDEC 500 course participants will:

- Understand the structure and operation of the electric power system as a whole
- Learn about electric customer classifications based on load categories
- Understand the modeling of electrical loads in power system studies
- Learn to interpret one-line diagrams, identify components depicted, and describe their functions
- Get acquainted with the concepts of active and reactive power and their impact on power system operations

- Understand the most common distribution system configurations, their operation, and design considerations
- Learn to identify power distribution system equipment, such as transformers, voltage regulators and reclosers
- Understand the fundamental concepts of power quality, identify the main causes of power quality issues, and discuss related standards
- Understand how electric utilities measure reliability and explain the use of reliability indices, such as SAIFI, MAIFI, CAIFI, SAIDI and CAIDI
- Understand capacitor applications, placement of capacitor banks, power factor correction with capacitors, and loss reduction due to capacitor application
- Perform calculations including: Ohm's and Kirchoff's laws; loop and nodal analysis; series and parallel circuits; Thevenin and Norton equivalents; star-delta and delta-star conversions; DC and AC circuits; active, reactive and apparent power; power factor; resistive, inductive and capacitive circuits; three-phase power systems; balanced and unbalanced networks;

fault calculations; and the per unit system.

Upon completion of this course, the participant will have the ability to better understand common power circuit problems and will have a stronger understanding of distribution system problems and equipment applications.

Prerequisites

A background in electric power systems is not required. It is assumed that participants have college level geometry, trigonometry, matrix algebra, and physics.

Course structure

This is a three-day course. Material is presented in both morning and afternoon sessions for a total of six hours of daily instruction. Standard course hours are 9:00 a.m. to 4:00 p.m. each day.

To view the PDEC 500 Course Schedule on the web:

https://siemens.coursewebs.com/cart/pageCourseInfo.aspx?Course_ID=PDEC_500

Instructors

All courses offered through Siemens Power Academy are developed and taught by leading industry engineers. In addition to their proven instructional ability, our engineers have advanced degrees complemented by first-hand knowledge and experience solving power system problems throughout the world.

Continuing Education Units (CEUs), Professional Development Hours (PDHs):

Licensed engineers, on a voluntary or mandated basis, attend continuing professional education for licensure renewal to ensure competency. All courses offered through Siemens

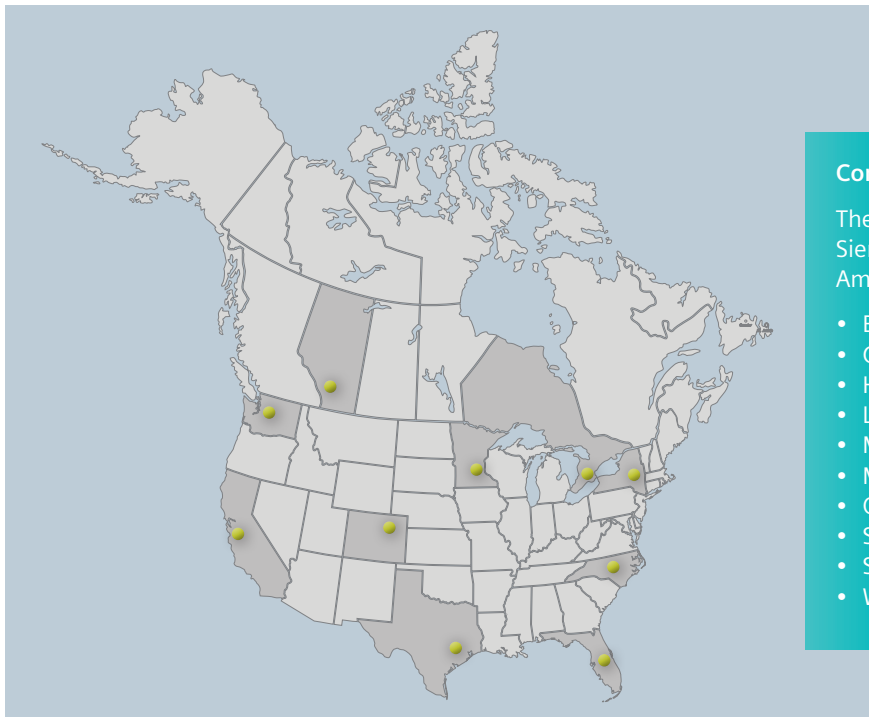
Power Academy meet the requirements for CEUs and PDHs.

- Continuing Education Units (CEUs) are the nationally recognized units for recording participation in professional development and noncredit educational programs. Participants completing this course will be awarded CEUs based on the instructional hours of the course: one CEU is awarded for 10 classroom hours of instruction.
- Professional Development Hours (PDHs) – Continuing education training for the Professional Engineer (PE) – that needs to earn annual Professional Development Hours

(PDHs). Through our instructor-led training, participants earn one PDH for each one hour of instruction. The participant is responsible for maintaining records of courses taken in support of licensure.

Client site and custom training

All courses are available for presentation at any client's location by special arrangement. At client sites, it is recommended that sufficient computer terminals be available to enable a fully interactive and productive class, if applicable. Client site courses can also be tailored to address specific topics of local importance.



Convenient training locations

The course is scheduled on a regular basis at Siemens offices located throughout North America, including:

- Burlington, Ontario, Canada
- Calgary, Alberta, Canada
- Houston, Texas, USA
- Littleton, Colorado, USA
- Minnetonka, Minnesota, USA
- Mountain View, California, USA
- Orlando, Florida, USA
- Schenectady, New York, USA
- Seattle, Washington, USA
- Wendell, North Carolina, USA

Contact us

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