

Ministry of Human Resource Development
Government of India

Discipline of Electrical Engineering
Indian Institute of Technology Indore



5 Day Course on

Modern Power Distribution Systems

January 08 - 12 | 2018



Teaching Faculty



Dr. Anil Pahwa
Professor and Logan-Fetterhoof Chair
Electrical and Computer Engineering Department
College of Engineering
Kansas State University
Manhattan, Kansas

Dr. Anil Pahwa received PhD from Texas A&M University in 1983, MS from the University of Maine in 1979, and BE (Honors) from BITS-Pilani, India in 1975, all in electrical engineering. His research and teaching interests include smart grid, distribution system planning, intelligent computational methods for power systems, renewable energy, and sustainability.

He has served in many leadership positions in IEEE PES over the past 20 years. As chair of PEEC of IEEE PES from 2011 to 2013, he actively set new directions for the research and education agenda to advance electric power and energy systems worldwide. He was an editor from 2010 to 2015 of IEEE Transactions on Power Systems. He has served on the Advisory Committee of DistribuTECH, a premier conference focused on automation of power distribution systems, for over 25 years. He served as a Senior Scientific Advisor in Economic Policy Office of East Asian and Pacific Affairs Bureau of the U.S. Department of State as a part of the fellowship. Dr. Pahwa has worked on several research projects sponsored by the utilities in Kansas, the National Science Foundation, and the Department of Energy. His research on power and energy has taken him to several countries including Australia, Nigeria, Kenya, South Africa, Cape Verde, and Turkey. As a faculty adviser for the student chapter of Engineers Without Borders, he has guided students on projects in India, Guatemala, and Ecuador. From 2007 to 2011, Dr. Pahwa served as the electrical engineering coordinator for a World Bank-funded project to strengthen higher education in Afghanistan.

The National Academies selected him for the Jefferson Science Fellowship in 2014. Dr. Pahwa received the Staszeky Distribution Automation Award in 2012 and Prize Paper Award in 2013 from IEEE PES. He received Erickson Public Service Award in 2011 and Frankenhoff Outstanding Research Award in 2012 from the College of Engineering of Kansas State University.

Course Overview

This course will present a historical overview of the progress of automation in distribution systems. Various contemporary issues that are relevant for the modern distribution systems will be discussed. Distribution automation will be defined and a detailed discussion of distribution automation functions will be presented. This will be followed by cost/benefit analysis of distribution automation functions with mapping of the functions to various expected benefits. Examples of expressions needed to compute benefits will be provided. In addition, the course will discuss basics of distribution system planning, reliability, and analysis. Finally, various emerging issues for distribution systems and associated research opportunities will be covered.

The goal of this course is to understand the evolution of distribution systems and examine challenges and opportunities associated with modern distribution systems. The course will be useful for the individuals from industry as well as researchers and academicians working in power systems.

Course Details

1. **Distribution System Fundamentals**
2. **Distribution Automation and Associated Functions**
3. **Economic Analysis**
4. **Planning, Reliability, and Analysis**
5. **Emerging Distribution Systems**

Host Faculty



Dr. Trapti Jain
Associate Professor
Discipline of Electrical Engineering
Indian Institute of Technology
Indore
Indore, India

Dr. Trapti Jain received the Ph.D. degree in electrical engineering from the Indian Institute of Technology Kanpur, Kanpur, India. Since 2015, she is also an Independent Director of Madhya Pradesh Paschim Kshetra Vidyut Vitran Company Limited (MPPKVVCL). Her research interests include power system security, artificial intelligence applications to power systems, power system dynamics, microgrid stability and control, power quality, and grid integration of electric vehicles.

Who Can Attend

- Research scholars, graduate students, undergraduate students, engineers, trainees, and researchers from different organizations/institutions across the country working in the field of power systems or energy engineering.
- Faculty members and academicians interested in research or who wish to update their knowledge in the field of power systems.
- Professionals, executives, and engineers working in the power industry and other government organizations including R&D laboratories who are engaged in power engineering.

Travel and Accommodation

- Indore is located in central region of India in Madhya Pradesh State. Indore is well connected by Road, Rail, and Air. The nearest railway station is Indore Junction and the nearest Airport is Devi Ahilyabai Holkar Airport. For queries regarding travel information, please contact the course coordinator.
- Participants have to make their own travel arrangements.
- Institute accommodation on sharing basis can be provided on chargeable basis subject to availability.
- For any information regarding eligibility, fee payment, travel information, accommodation, special requests, etc., please contact the course coordinator.

Programme Coordinator

Dr. Trapti Jain

Associate Professor
Discipline of Electrical Engineering
Indian Institute of Technology Indore
Khandwa Road, Simrol
Indore, Madhya Pradesh, India
PIN: 453552

Course Objectives

- Introduce participants to the fundamentals of power distribution systems.
- Cover various aspects of distribution automation and the associated functions.
- Provide cost/benefit analysis of selected distribution automation functions.
- Cover basics of distribution system planning and reliability and their relevance to distribution automation.
- Introduce distribution system analysis.
- Discuss the emerging trends in distribution systems and associated challenges.
- Focus on new technologies and solutions for modern distribution systems to enable larger penetration of distributed renewable resources and to make systems more resilient.

Registration Fee*

Professionals from industry / private organizations	Rs. 10,000
Faculty members of educational institutions / research organizations	Rs. 5,000
Students/Research Scholars from educational institutions	Rs. 3,000
Foreign delegates	USD 225

* Inclusive of taxes.

Important Dates

Registration deadline	December 20, 2017
Course schedule	January 08-12, 2017

Course Venue

Indian Institute of Technology Indore
Khandwa Road, Simrol
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PIN: 453552

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