



**COMSATS** Institute of Information Technology

Department of Electrical Engineering

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## POWER DISTRIBUTION SYSTEM DESIGN (PDSD) TRAINING COURSE

### *Introduction*

There is a growing demand in the industry for people with knowledge and expertise of power distribution system design. Proposed PDSD training course is being offered by Renewable Energy and Power Systems Research Group, EE, CIIT LHR. This extensive training course prepares participants to manage and extend existing distribution networks. This skill gives an added advantage to the participants when applying for employment in today's job market where power experts are in great demand. Power Distribution System Design (PDSD) training course has been designed to provide the knowledge and skills necessary to design or upgrade a power distribution system and guarantee a bright future in industry.

### *Scope*

This course is crucial for anyone interested in building a career in the designing and maintaining of power distribution networks in any industry. To undertake this course no prerequisite is required however this course is highly suitable for people with Electrical Engineering background. It is preferable that course participants have passed Electric Machines (EEE 371).

### *Objectives*

- To enable CIIT students to enter the job market with an edge over others.
- To mitigate the future obligations in Power Sector.
- To provide the foundation for development of Micro Grid Station at CIIT LHR.
- To empower the CIIT students in design methodology of power distribution system.

### *Program Team*

- Dr. Saleem Farooq Shaukat, *Head of Electrical Engineering Department.*
- Dr. Intesar Ahmed, *Head of Renewable Energy and Power Systems Research Group, Electrical Engineering Department*
- Engr. Yasser Majeed Siddiqi, *AP EE and Program Incharge of PDSD*
- All Members of *Renewable Energy and Power Systems Research Group*
- Engr. Kashif Imran, *Lecturer EE, Instructor of PDSD*
- Engr. Muhammad Shuja Khan, *Lecturer EE, Instructor of PDSD*

**RENEWABLE ENERGY AND POWER SYSTEMS RESEARCH GROUP  
ELECTRICAL ENGINEERING DEPARTMENT**

## *Course Contents*

- Instantaneous Power, Average Power, Effective or RMS Value
- Power Factor
  - Apparent Power, Active (real) Power and Reactive Power
  - Power Factor Correction
- AC Systems
  - AC Single Phase Systems, Two Phase Systems and Three Phase Systems.
- Balanced Three Phase Voltage
  - Balanced Y-Y, Y- $\Delta$ ,  $\Delta$ - $\Delta$  and Y- $\Delta$  Connections.
- Classification of AC Distribution System
  - Radial and Ring Main Systems.
- Design of Distribution Board
  - MCBs
  - MCCB
  - Cable
- Design of Main Panel Board
  - MCCBs
  - Cables
  - Grounding
- Single Line Diagrams
  - Complete generator backup
  - Partial generator Backup
- Types of Cables
  - Armoured/Unarmoured
  - Single/two/three/three and a half/four Core
- Design of Motor Control Centre
  - Direct On-line
  - Star Delta Starter
- Design of Overhead Distribution System
  - Types of Insulators
  - Types of Cables

## *Venue and Program Details*

Electric Machine & Control Lab, Electrical Engineering Dept. CIIT Lahore.

Classes will be held in evening at 4.30pm to 6pm or 6pm to 7.30pm daily.

Program Duration: Four weeks (Five days in a week)

Starting Date: **March 01, 2010**, Closing Date: **March 29, 2010**

Closing ceremony will be held on **March 29, 2010** and *Certificates will be issued to students upon successful completion of the training course.*

## *Fee and Registration*

This Program has been designed to train 20-25 students in a session as per the availability of equipment and instructors. Fee for complete training PDS course is Rs.2000/- Contact account office, CIIT LHR for fee submission.