

**AICTE & IKGPTU Sponsored National Level  
One-week Faculty Development Program  
on**



**Recent Advancements in Power  
and Energy Systems  
(09<sup>th</sup> - 13<sup>th</sup> December, 2019)**



**Organized by  
Department of Electrical Engineering  
I. K. Gujral Punjab Technical University,  
Main Campus Kapurthala, Punjab, India**  
<https://ptu.ac.in>

**INTRODUCTION AND OBJECTIVES**

Electric power plays an important role in economic development of any nation. A secure, reliable and economic operation of power systems is very much essential for industrialization. The present trend towards deregulation in power sector is forcing electric utilities to improve their efficiency and reduce cost whereas customers are becoming more sensitive to reliability and power quality. Competitive power market has changed the traditional mission and mandates of power utilities in complex ways that has caused large impacts on environmental, social, and political conditions in several countries worldwide. RES and technologies have tremendous potential to provide solutions to the long-standing energy problems being faced by consumers in all developing countries. This course has been designed to familiarize the researchers and engineers working in the field of competitive power systems and energy operation with the core concepts of economic dispatch, unit commitment and optimal power flow.

**COURSE CONTENTS**

- ❖ Economic Dispatch of Electric Power System
- ❖ Competitive Power Market/Electricity Market Operation
- ❖ Power System Operation, Economics
- ❖ Grid Integration of RES: Key Issues, Challenges and Solution
- ❖ Steady State Operation of Power System
- ❖ Energy Management, Demand Side Management Distributed Generation
- ❖ Micro Grid, Smart Distribution System
- ❖ Power Flow and OPF and their programming
- ❖ Simulation of Power System
- ❖ Energy Scheduling & Forecasting Techniques
- ❖ Power Trading, Market Regulation and Policies
- ❖ Energy Efficiency and Energy Auditing

**METHODOLOGY**

The one-week programme will be judiciously utilized by integrating theory classes, laboratory sessions, case studies and audio-visual presentations. Besides the institute faculty, experts will be invited from various esteemed institutions/ R & D organizations. This FDP will also be useful to various energy regulatory bodies, leading power project managers, engineers, production managers, academia, technical managers, plant superintendents, operators and maintenance personnel, and private power consumer companies.

**TARGET GROUP**

Teachers from recognized engineering colleges/ Institutions; practicing engineers from public/ private organizations with minimum qualification of Bachelor's Degree in any branch of Engineering/ or its equivalent M. Tech. and Ph.D. Research Scholars are eligible for registration. The number of participants is limited and will be selected on first come, first serve basis. The interested participants need to get themselves sponsored from their HOD/Principal/Head of Institution and send their request on prescribed performa to:

**Dr Naveen Kumar Sharma**, Assistant Professor,  
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[naveen31.sharma@gmail.com](mailto:naveen31.sharma@gmail.com)

**LAST DATE**

Last date of receiving applications for participation in this FDP is **November 15<sup>th</sup>, 2019**.  
Information regarding selection will be displayed on institute website or selected candidates may also be informed by email.

## IMPORTANT INSTRUCTIONS

There will be a **No-Registration Fee** any for sponsored participants from academic institutions and industry.

Interested faculty from AICTE recognized Technical/ Govt. Institutes & Personnel from Industry can apply on line at <http://data.ptu.ac.in/fdpRegn.php> and take print of application form. Seats are limited and applicants will be selected on first come, first serve basis.

No TA/DA will be given to any participant. Suitable arrangements for free boarding and lodging of participants will be made at students' hostel.

## ORGANIZING COMMITTEE

### Chief Patron

**Prof. (Dr) Ajay Kumar Sharma**  
Vice-Chancellor

### Chairman

**Prof. (Dr) Yadwinder Singh Brar**  
Director Main Campus

### Co-Chairman

**Dr Gagandeep Kaur**  
Head, EED

### Course Coordinators

**Dr Yadwinder Singh Brar**  
Professor, EED

Email: braryadwinder@yahoo.co.in  
Mob. No.: +91-9478098013

### Dr Naveen Kumar Sharma

Assistant Professor, EED  
Email: naveen31.sharma@gmail.com  
Mob. No.: +91-9882281525

## ABOUT THE DEPARTMENT

The Department of Electrical Engineering offers an undergraduate programme in Electrical Engineering, postgraduate programmes and Ph.D. in various areas of Electrical Engineering. The Department has highly qualified, experienced faculty and well-established laboratories.

## IKGPTU MAIN CAMPUS KAPURTHALA

PTU was established by an Act of State Legislature on 16<sup>th</sup> January, 1997, to promote technical, management and pharmaceutical education in the state at degree level and above. It was established as Punjab Technical University and renamed as I. K. Gujral Punjab Technical University by State Government in the honor to Late Sh. Inder Kumar Gujral, Former Prime Minister of India.

The University has the mandate to set up centres of excellence in emerging technologies and for promoting training, research and development in these areas. The University has undertaken the task of training students to help in the development of skilled manpower in this sector in the country in general and in the state in particular. With this goal in mind, the university is promoting a number of courses in different streams in regular as well as distance education programmes. At present University have 121 AICTE and 65 UGC institutes affiliated with it.

IKGPTU Main campus has a sprawling campus spread over an area of about 78 acres, and is located on the outskirts of Jalandhar at about 20 kms from the bus stand. IKGPTU ranked 96<sup>th</sup> in 2019 NIRF India ranking and 3<sup>rd</sup> in Punjab after IIT Ropar, TIET Patiala. The institute offers 4-year Bachelor Engineering Courses (B.Tech.) in five branches of Engineering, 5-year degree course in Architecture (B.Arch.), M.Tech. and Ph.D. programmes in various specializations.

## REGISTRATION FORM

One-week Faculty Development Program  
on  
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1. Name of the Candidate.....  
Designation:.....  
Email:.....  
Office Tel No./Mobile No.:.....
2. Name of the Institution and Department:  
.....
3. Address for Correspondence:  
.....  
.....
4. Educational Qualification:.....
5. Experiences (a) Teaching:.....  
(b) Industrial or others:.....
6. Accommodation Assistance Required (Yes/No):.....

Place and Date (.....)  
Signature of the Candidate

I hereby sponsor  
Dr./Mr./Ms.....to participate  
in the FDP on "Recent Advancements in Power and Energy  
Systems", being held at I.K. Gujral Punjab Technical  
University, Kapurthala, Punjab, India. During the period of  
entire program He/She would be on the official duty at  
IKGPTU Punjab.

Signature with Date & Seal  
Sponsoring Authority (HOD/Principal/ Director)

Note: Photocopied/typed Reg./online Form can be used or  
may be downloaded from institute website.