



**AICTE Training and Learning (ATAL)
Academy Sponsored**

**An Online One Week
Faculty Development Program
on
Integration of Alternate Energy
Resources in Smart Grid**

25th -29th December, 2020



Organised by



**Department of Electrical and Electronics Engineering
NATIONAL INSTITUTE OF TECHNOLOGY DELHI
(An autonomous Institute under the aegis of Ministry
of Education, Govt. of India)
Sector A-7, Institutional Area, Narela,
Delhi-110040, INDIA,
Website: www.nitdelhi.ac.in**

COURSE INTRODUCTION

An important goal of Smart Grid is to leverage infrastructure to help monitor and control the power systems more effectively. Moreover, the integration of Alternate Energy Resources (AER) in the grid has been a growing demand of monitoring and control of the power system. Solar Photovoltaic, Wind, Biomass, etc. are foremost sources of energy that come under alternate energy resources and accepted as widely available AER for power generation. AER offers a clean and pollution-free source of energy. India set the ambitious goal of generating 227GW (earlier 175 GW) of renewable energy by 2022, including 113 GW Solar (70 GW utility-scale and 43 GW on roof-tops), 66 GW of wind, 10 GW of bio-energy, 5 GW of small hydro and other renewable sources. The integration of these AER to the grid can be possible by power electronic converters. These converters act as the interface between RES and Grid. In today's era, a Stable, protected, energy-efficient and good supply quality integration is the mandate of the present and future electrical power system. Various new/modified control algorithms, topologies are developing throughout the world to enhance grid integration.

COURSE OBJECTIVES

- ❖ This course is designed to provide an exposure about the architecture, design and interfacing aspects of smart Grid.
- ❖ To identify the issues in integration of alternate energy resources.
- ❖ To provide the up-to-date technologies in power converters.
- ❖ To enrich participant's knowledge and help them learn to develop methods for solving energy management of alternate energy resources.

- ❖ To identify human values & Professional Ethics and sensitize the faculty to the possibility of a humane society.

COURSE CONTENT

The program is focused to discuss various aspects of smart grid. Following are the topics to be covered in this program:

- ❖ Overview of Smart Grid: Architecture, Design and Interfacing Aspects
- ❖ Challenges in Integration of AER
- ❖ Power converters for renewable energy systems and their controls
- ❖ Application of heuristic algorithms in Smart Technology
- ❖ Battery storage systems and new storage technologies
- ❖ Energy Management of AER
- ❖ Power System Operation in Uncertain and smart grid Environment
- ❖ Future of Green technology in India: policies and R&D

RESOURCE PERSONS:

Academicians from IITs, IISc, NITs, and professionals from industries.

WHO CAN ATTEND

- ❖ Program is open to all faculty members, practitioners and researchers; PG/Doctoral Students from AICTE affiliated institutes.
- ❖ Since the number of seats is limited to 200, the selection will be made on first cum first basis and intimation will be sent to the candidates by email.
- ❖ No TA/DA will be paid to the participants.

ABOUT NIT Delhi

National Institute of Technology Delhi (NITD) is one of the thirty NIT (s) established in the year 2010 by an act of parliament and has been declared as an Institute of National importance. NIT Delhi is an autonomous Institute which functions under the aegis of Ministry of Education, Government of India. It aims to provide instructions and research facilities in various disciplines of Engineering, Science and Technology, Management, Social Sciences and Humanities for advance learning and dissemination of knowledge. At present, in addition to research, consultancy and developmental activities, the Institute offers UG and PG (M. Tech. & Ph.D.) level courses to about 1000 students in almost all leading fields of engineering, technology.

ABOUT EEE DEPARTMENT

The Department is one of the oldest departments of the institute, offering a line blend of experience and innovation in teaching. Presently, offering an undergraduate programme in Electrical and Electronics Engineering and Post graduate studies in Power Electronics and Drives respectively. The department is home to over 40 research scholars, pursuing a Ph.D. in varied fields of electrical engineering. The department provides a life-long learning experience, through its state of art laboratories, a vast pool of courses, and industry orientation. A strong collaborative framework with reputed universities in India and abroad, the department offers ample opportunities for individual growth.

ABOUT ATAL, AICTE

To plan and help in imparting quality technical education in the country and to support technical institutions in fostering research, innovation and entrepreneurship through training in various emerging areas. ATAL is committed for development of quality technical education in the country by initiation various schemes

PATRON

Padmashri Dr. Satish Kumar, Director, NIT Delhi

PROGRAM COORDINATOR

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REGISTRATION LINK

The registration for the workshop can be done through online link. Batch size is limited. Maximum of 200 candidates will be permitted to attend the FDP. The registration link is as follows:

<https://atalacademy.aicte-india.org/>

There are no registration charges to attend the program. i.e. it is FREE for selected participants. The FDP will be scheduled from 11 AM to 5.00 PM.

ORGANIZING COMMITTEE

Dr. Anmol Ratna Saxena, HoD, Dept. of EEE
Dr. Pankaj Mukhija, Assistant Professor, Dept. of EEE
Dr. Anshul Agarwal, Assistant Professor, Dept. of EEE
Dr. Tirupathiraju K., Assistant Professor, Dept. of EEE
Dr. Sachin Singh, Assistant Professor, Dept. of EEE
Dr. Amit K. Singh, Assistant Professor, Dept. of EEE

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REGISTRATION FORM



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Name.....

Designation.....

Department.....

Academic Qualification.....

Research Area

Organization.....

Address.....

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Mobile.....

E-Mail.....

Date

Place:

Date:

Signature of the applicant

Signature and Seal of Sponsoring Authority