

Online Faculty Development Program
on
**Electrical Distribution System
Analysis with Renewable Energy
Sources (EDSARES-2021)**
July 12-16, 2021



Organized by
Electrical Engineering Department
National Institute of Technology,
Kurukshetra



Sponsored by
AICTE Training and Learning
(ATAL) Academy

Preamble: The extensive penetration of renewable energy resources and operation of the smart distribution systems defines the barriers and challenges of Smart Grid. The smart distribution network will require advanced energy management techniques as well as demand response programs (DRPs) and has an impressive impact on the operation of Power Grid. There is a need of proposing optimal solutions for operation and the management to address them. With respect to the active and influential role of distribution grids in the restructured environment, it is essential to achieving optimal operation of Micro-Grid energy management. This requires comprehensive analytic studies and rigorous researches in the area of smart distribution systems. In this regard, a new strategy of operation of the smart distribution system and its optimal energy management of a Micro-Grid in the presence of Electric Vehicle Charging Station (EVCS), Distributed Energy Resources (DERs), storage devices and electrical vehicles considering the uncertainties of renewable energy resources is required. The minimization of operation costs of energy storage facilities, environmental emission, the costs corresponded with the energy not supplied (ENS) and excess generation capacity are the main objectives to be addressed. The technical constraints of distributed generation resources and energy storage facilities need to be imposed on the for optimal utilization of the micro grids based smart distribution systems.

The demand-side management programs can play an important role for the operation and management of the smart distribution system micro grid. This short term program will address issues of smart distribution systems with DERs and demand side management.

In the pursuance of vision of AICTE ATAL academy, this FDP could offers multiple milestones through delivering Technical knowledge, skills and awareness on the Electrical Power Distribution System of Indian and Global perspective.

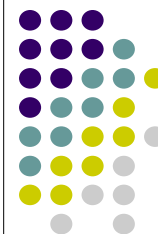
Objective of ATAL Academy: To Plan and help in imparting quality technical education in the country and to support technical intuitions in fostering research, innovation and entrepreneurship through training in various emerging Areas.

Objective of the FDP : The primary concern is to impart the basic knowledge of analysis of operation of smart distribution system with DERs and demand side management. Objectives are mention as follows in brief:

- Imparting the concepts of smart distribution system and key challenges and issues.
- To study the role of distribution system analysis in the future smart grid
- Exploring different aspects on penetration of renewable energy resources and flexible reserves along with EVs.
- Roadmap for higher EV penetration and its impact on the power system – Challenges and Mitigation Measure.
- To identify the thrust Research and Innovation in the smart distribution systems energy management.
- To share the advance techniques for analysis and operation of the smart distribution systems.
- Short-term Scheduling of Future Distribution Network with Penetration of Electric Vehicles .
- Short-Term Prediction of Solar Power, Wind Energy and other Renewable based Distributed Energy Resources.
- Virtual Synchronous Generator Concept for improving the resiliency in Renewable Energy Sources integration.
- Recent Trend of Smart Grid

Our Proposed Experts:

- Prof. G. B. Kumbhar, Associate Professor, Department of Electrical Engineering, Indian Institute of Technology, Roorkee
- Prof. Debapriya Das, Professor, Department of Electrical Engineering, Indian Institute of Technology, Kharagpur
- Dr. Ramappa Nagaraja, Managing Director at Power Research & Development Consultants Pvt. Ltd.
- Prof. Ashwani Kumar, Professor, EED, National Institute of Technology, Kurukshetra
- Prof. Ravikumar Bhimasingu, Associate Professor, Department of Electrical Engineering, Indian Institute of Technology Hyderabad
- Prof. Naran M. Pindoriya, Associate Professor, Department of Electrical Engineering, Indian Institute of Technology Gandhinagar
- Prof. Trapti Jain, Associate Professor, Department of Electrical Engineering, Indian Institute of Technology Indore.
- Prof. Manisha Dubey, Professor, Department of Electrical Engineering, National Institute of Technology, Bhopal
- Prof. Parimal Acharjee, Professor, Department of Electrical Engineering, National Institute of Technology, Durgapur
- Dr. Atma Ram Gupta, Assistant Professor, EED, National Institute of Technology, Kurukshetra





About AICTE Training And Learning (ATAL) Academy

AICTE is committed for development of quality technical education in the country by initiating various schemes launched by Govt. of India, Ministry of Human Resource Development e.g. SWAYAM, MOOCs, Start-up Initiatives, Prime Minister Kaushal Vikas Yojana, Sansad Adarsh Gram Yojana (SAGY), Swachh Bharat/ Unnat Bharat Abhiyan, Yoga Activities etc. Council understand that there is a need of the day to train the young generation in skill sector and having faculty & technicians to be trained in their respective disciplines. It was felt that Training with latest tools and technologies is vital to keeping an institute competitive and more productive. Training is required for increasing the knowledge and skills of students to make them more employable to acquire global competencies. It also transforms them to harmonize with society and most importantly to make them a good citizen of the country.

It is planned that AICTE Training And Learning (ATAL) Academy will conduct series of Training Program in various thrust areas in all the four academies.



About NIT Kurukshetra

National Institute of Technology, Kurukshetra, one of the 31 NITs in the country, is a premier center of learning and research in various disciplines of Engineering and Management. It trains and develops high caliber professionals to serve not only the country but also the world at large. Established in 1963 as an REC, the college was elevated to a National Institute with Deemed University status in June 2002. The Institute has made rapid strides in expanding and upgrading facilities, enhancing the quality of education and strengthening the linkage with industry. The Institute has B.Tech, M.Tech, MBA and MCA Courses in various disciplines. Institute also offers excellent facilities for advanced research in the emerging areas of Science and Technology leading to Ph.D. degree.

The institute has well qualified and dedicated faculty along with finest supporting staff, laboratories and other infrastructure. The syllabus and the curricula are constantly being updated

Organizing Team

Patron

Dr. Satish Kumar

Director, NIT Kurukshetra

Co Patron

Dr. L. M Saini, HOD & Professor, EED

Convener

Dr. Ashwani Kumar, Professor, EED

Coordinator

**Dr. Atma Ram Gupta
Assistant Professor, EED
NIT Kurukshetra**

Registration

- **No Registration Fee**
- **The registration in the FDP will be done through online portal of ATAL academy. <https://atalacademy.aicte-india.org/signup>**
- **The selection of the participants will be based on first come first serve basis.**

Who can register?

The faculty members of the AICTE approved institutions, research scholars, PG Scholars, Participants from Government, Industry (Bureaucrats/ Technicians/ Participants from Industry etc.) and staff of host institutions .

Certification

E-Certificates shall be issued by AICTE Training and Learning (ATAL) academy to those participants who have attended the programme with minimum 80% attendance and scored minimum 60% marks in the test conducted at the end of the online FDP.

Contact Person

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