Online Faculty Development Programme on
Advanced Smart Grid
19th Jan - 14th Feb 2026

Jointly organized by Electronics and ICT Academies
Established by the Ministry of Electronics and Information Technology, Govt. of India

IIITDM Jabalpur | IIT Guwahati | IIT Kanpur | IIT Roorkee | MNIT Jaipur | NIT Patna | NIT Warangal

Objective (Electronics & ICT Academy-Phase II)

1. To conduct specialized FDPs for faculty/mentor training in line with the vision of MeitY by promoting emerging areas of technology and other high-priority areas that are pillars of both the "Make in India" and the "Digital India" programs.
2. To promote synergy and collaboration with industry, academia, universities and other institutions of learning, especially in emerging technology areas.
3. To support the National Policy on Electronics 2019 (NPE 2019) which envisions positioning India as a global hub for ESDM sector, including MeitY Schemes/policies such as Programme for Semiconductors and Display Fab Ecosystem; India AI; National Programme on AI, Production Linked Incentive Scheme for IT Hardware & Large-Scale Electronics Manufacturing; EMC; SPECS; Chips to System (C2S); etc.
4. To promote standardization of FDPs through Joint Faculty Development Programmes.
5. To support the vision of the National Education Policy (NEP 2020), which mandates that Indian educators go through at least 50 hours in professional development programmes per year.
6. To design, develop & deliver specialized FDPs on emerging technologies/ niche areas/ specialized modules for specific research areas for Faculty in Higher Education Institutions (HEI), besides FDPs on multi-disciplinary areas connected with ICT tools and technologies and other digital hybrid domains, covering a wide spectrum of Engineering. and non-engineering colleges, polytechnics, ITIs, and PGT educators.

Joint-Principal Coordinator
Dr. Sachin Kumar Jain
skjain@iiitdmj.ac.in
Assistant Professor, ECE
PDPM IIITDM, Jabalpur

Principal Coordinator
Prof. N. P. Padhy, MNIT Jaipur
Dr. Man Mohan Garg, MNIT Jaipur
fdp.academy@mnit.ac.in
E&ICT Academy
MNIT, Jaipur

An intensive 40 Hours Training Programme in online mode is being organized for faculty and doctoral students of engineering and technological institutions. It is also open to working professionals from the industry/organizations. The main theme of the training program will be oriented around exploring the state-of-the-art methods of advanced smart grids. The programme will run from 5:00 PM to 7:00 PM daily (except Sunday).

Programme Contents

Module 1: Introduction to power distribution networks, Difference between power transmission and distribution networks, the architecture of distribution networks, Impacts of DERs on distribution grids & its hosting capacity assessment, Operational challenges associated with DER-integrated distribution networks
Module 2: Introduction to distribution network load flow and sparsity quantification, Graphical load flow analysis of DER-integrated distribution networks, Load flow analysis with different load models, Three-phase power flow with unbalanced DER penetration, Example of load flow solution in OpenDSS platform
Module 3: Introduction to reliability analysis, Probabilistic failure analysis of network components, Reliability metrics, Value of loss load calculation, System reliability enhancement technologies
Module 4: Concept of distribution system operator (DSO), Bidding mechanism for DSOs, Ancillary support from distribution grids to transmission networks, T&D market mechanism, Case study demonstration on T&D interaction
Module 5: Overview of advanced distribution management systems (ADMS), Smart Meters and Advanced Metering Infrastructure (AMI), Operation of distribution phasor measurement units (d-pmu), Distribution network restoration mechanism
Module 6: Operation and control of DC Microgrid, AC Microgrid and AC/DC hybrid Microgrid, Hierarchical control techniques in hybrid AC-DC microgrid, Demand side management of smart grid, Demand Response Analysis of smart grid, Design of Smart Grid and Practical Smart Grid, Case Study Simulation and case study of AC Microgrid, DC Microgrid, AC-DC Hybrid microgrid
Module 7: Demonstration of solar power generation, wind power generation, Battery Management System, EV charging system, grid-connected DC microgrid, energy management in microgrid, PHIL experimentation for symmetric and asymmetric fault analysis of grid-connected DFIG wind turbine, ancillary support from virtual synchronous generator, peak energy management using energy storage system

Experts/Speakers

Prof. N. P. Padhy, Director MNIT Jaipur & Professor (HAG), IIT Roorkee

Registration Link: https://forms.gle/NXezHN9qdRseqb7P8

Beneficiary Name -PDPM IIITDM Jabalpur
Bank Name - INDIAN BANK
A/C No. - 50018692852
IFSC Code - IDIB000M694

PDPM IIITDM JABALPUR
SCAN & PAY
UPI ID : iiitdmj@indianbk

Certification Fee:
Academia (Faculty/Students) from (India/SAARC/Africa): ₹ 500/-
Industry/Others from India/SAARC/Africa: ₹ 1500/-
Rest of the world: US $ 60/-
The fee covers course material and certification charges.

Contact for queries: Mr. Durgesh Kushwaha 7898670354
academy@iiitdmj.ac.in, eict@iiitdmj.ac.in