Organized by
Electronics & ICT Academy

MNIT Jaipur
http://www.mnit.ac.in/eict

Online FDP Programme
on
Optimization Techniques: Theory & Application to Power Systems

Feb 03- Feb 14, 2026

Faculty Development Programme
Electronics & ICT Academy under aegis of

Ministry of Electronics and Information Technology
Government of India

meity.gov.in/content/schemes-projects

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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 specialised FDPs on emerging technologies/ niche areas/ specialised 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.

The modern power system is a highly complex, data-driven and optimization-intensive domain. From economic load dispatch and unit commitment to optimal power flow and renewable integration, every operational and planning decision involves optimization.
This 40-hour online course offers a **comprehensive and application-oriented understanding of optimization theory and algorithms.** Participants will gain **hands-on experience using GAMS and MATLAB** to formulate, solve, and analyze optimization models for generation, transmission, and market operations.
Designed for faculty, **postgraduate students, researchers, and industry professionals**, the course bridges theory, computation, and practice, empowering learners to apply optimization methods confidently.
The programme will be run 3 hours/day on week days and 5 hours on Saturday.

Programme Modules:

Module 1: Fundamentals of Optimization : Linear & nonlinear programming, Convexity & optimality conditions, Classical methods (gradient, Newton), Problem formulation in power systems
Module 2: Linear & Nonlinear Optimization in Power Systems : Economic dispatch, Optimal power flow, Transmission loss minimization, Reactive power optimization
Module 3: Metaheuristic & Evolutionary Algorithms: Genetic algorithms, Particle swarm optimization, and etc., Hybrid approaches for grid applications
Module 4: Advanced Optimization Techniques: Mixed-integer programming, Stochastic optimization, Robust & chance-constrained methods, Multi-objective optimization in power system
Module 5: Emerging Applications in Smart Grids: Demand response optimization, Renewable energy integration, EV charging coordination, Cyber-security of power system.

Programme Coordinator:

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Registration:
Registration is open to faculty, working professionals, industry persons, doctoral, postgraduate and graduate students from India and rest of the world. Participants will be admitted on first-come first-served basis. Register online at– (http://online.mnit.ac.in/eict/)

Registration Fee:

Mode of programme	Academia (faculty/Students): India/SAARC/Africa	Others: India/SAARC/Africa	Rest of the world
Online	Rs. 500/-	Rs. 1500/-	US $ 60/-

(A) Fee once paid will not be refunded back.
(B) The fee covers online participation in the programme, tutorial notes and examination, certification charges etc.
(C) The registration amount may be paid through online mode - NEFT / UPI / Cards / SWIFT, provided at the registration portal.
(D) Detailed schedule will be shared after receiving registration form.
→ For queries, **email us at** fdp.academy@mnit.ac.in

MNIT Jaipur one of the oldest NITs, the institute has a rich heritage of sixty years producing world class engineers, managers, architects and scientists. Ranked 42nd nationally in the NIRF ranking-2025 (Engineering), the institute offers learning opportunities for undergraduate, postgraduate students, and researchers in various domains. Having a lush green campus of over 317 acres within the heart of the pink city, close to Jaipur International Airport, the campus offers a safe and lively environment. A world class teaching infrastructure, state-of-art laboratories welcome you at the campus. The institute has a vision to impart education of international standards and conduct research at the cutting edge of technology.