Facilitated by AICTE, NQM, APSCHE, IITM, IBM, TCS & Others

Faculty Development Programme

QT-09 Engineering Foundations of Quantum Technologies

April 10 – May 02, 2026 (Mon to Sat)

Time: 3 – 5 PM (Daily 2 Hours)

इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी मंत्रालय
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
सत्यमेव जयते

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

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

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. Dip Prakash Samajdar
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An intensive **20 Day - 40 Hours** Training Programme in Online Mode is being organized for faculty and doctoral students of engineering, science, and technological institutions. It is also open to working professionals from the industry/organizations. The programme will be run for only two hours in the afternoon from **15:00 to 17:00 hours** Daily **(Mon to Sat).**

QT-09: Engineering Foundations of Quantum Technologies is the Eight in a series of Faculty Development programmes aligning to the courses in the recently approved Minor Course Curriculum on Quantum Materials by AICTE, DST and IBM.
https://facilities.aicte-india.org/Minor Quantum Technologies.pdf

Experts / Speakers:

1) **Dr. Aswath Babu,** Assistant Professor, IIIT Dharwad
2) **Dr. Mostafizur Rahaman,** Research Scientist, IBM Quantum, Bengaluru
3) **Dr. Dipti Saxena,** Professor, Electrical EngineeringMNIT Jaipur
4) **Dr. Jayakumar Vaithiyashankar,** CEO Anuthantra & IBM Educator, Bengaluru
5) **Ms. Nivedita Dey,** AK Choudhary School of IT, Kolkata
6) **Ms. Janani A,** IBM QuantumEngineer, IBM Quantum, Bengaluru

Programme Modules:

Electrical Networks: Analog RLC Circuits – Resonances, Impedances, Quality Factors, Transmission Line Basics - Telegrapher Equations, Wave Impedance, Electrical & Analog Communications: Quadrature Amplitude Modulation & Heterodyne and Homodyne Demodulation
Basics of Computer Architecture, Abstract Models of Computation - Regular, Context-free, Context-sensitive & Recursively Enumerable Languages, Finite State Machine, Pushdown automaton, Linear-bounded automaton, Turing Machine, Turing Decidable and Turing Recognizable Languages, Complexity Theory - Time and Space complexity, P and NP Problems, NP Hard and NP Complete
Noise and Signals - Characterising Noise, Types of Noise - Shot, Johnson-Nyquist, Telegraphic or flicker, Signal conditioning and noise mitigation, Amplification and Added Noise, Signal-Noise Ratio, Added Noise, Noise Figure of amplification, Dynamic Range, Noise temperature & Quantum limits on noise in linear amplifiers
Basics of cryptography & Number Theory, Random Number Generation, Symmetric and asymmetric cryptography protocols, RSA and DH Algorithms, Post Quantum Cryptography

Registration Link: https://forms.gle/itVyss7rVQ7gfPVB7

PDPM IIITDM JABALPUR SCAN & PAY

Beneficiary Name -PDPM IIITDM Jabalpur
Bank Name - INDIAN BANK
A/C No. - 50018692852
IFSC Code - IDIB000M694
Last Date of Registration- 8th April 2026

Certification Fee: Academic (Faculty/PhD Scholars): ₹ 500/-
Professionals / Industry / Others: ₹ 1000/-
Participants from the Rest of the World USD: US$ 60

Webinar Classes will be on Cisco WebEx, Notes / Slides will be shared and Quizzes / Assignments will be conducted on Canvase- Learning Platform,

Contact for queries: Mr. Durgesh Kushwaha 789 867 0354
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