

AICTE Approved Minor Program on
Quantum Computing



Faculty Development Programme

QT-07: Quantum Sensing

Sep 26 – Oct 17, 2025 (Mon to Sat) 2 PM – 4 PM



इलेक्ट्रॉनिकी एवं
सूचना प्रौद्योगिकी मंत्रालय
MINISTRY OF
ELECTRONICS AND
INFORMATION TECHNOLOGY



Innovation Centre for Education

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



IIT Roorkee



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 K Jain

Assistant Professor, ECE

PDPM IIITDM Jabalpur

Email: skjain@iiitdmj.ac.in

Principal Coordinator

Dr. Manoj Kumar

Associate Professor, Physics

MNIT Jaipur

Email: fdp.academy@mnit.ac.in

An intensive **20 Day - 40 Hour** training programme in online mode is being organized for faculty and doctoral students of various domains, including engineering, science, management and finance. It is also open to working professionals from industry/R&D organizations. The programme will run **02:00 PM to 4:00 PM (Mon-Sat)**.

QT-07: Quantum Sensing is the seventh in a series of Faculty Development programmes aligning to the courses in the recently approved Minor Course Curriculum on Quantum Computing by AICTE, DST and IBM.

<https://facilities.aicte-india.org/Minor Quantum Technologies.pdf>

Resource Persons

Prof. Rangan Jha, IIT Bhubaneswar

Dr. Rohit Goel, IIBM

Dr. Amrith Chowdhury, IIBM

Dr. Anwesh Babu, IIT Dharwad

Dr. Arup Samanta, IIT Roorkee

Dr. Vaibhav Gupta, IIT Mandi

Dr. Jaskaran Singh, IIT Mandi

Dr. Ramachandra Rao Yalla, University of Hyderabad

Dr. Tarun Dutta, University of Hyderabad

Dr. Akash Bani, DRDO DLRL, Quantum Technologies

Dr. Md Noaman, Wayne State University

Programme Modules:

Classical sensing, photodetection, Classical Noise, Johnson Noise, Telegraph noise, flicker or 1/f noise, Sensitivity of classical measurements, Classical Fisher information, Cramer-Rao bounds.

Quantum measurements, projective/orthogonal measurements, Approximate/non-orthogonal measurements, Weak continuous measurements, Error-disturbance relations, Standard quantum limits, Quantum non-demolition measurements.

States of light, Fock states, Coherent states, Squeezed states, Tomography, Wigner quasi-probability distribution, P-distribution, Husimi Q function, Quantum photo detection, Square-law detectors, Intensity measurements, and Photo-detection, Linear Detectors and Quadrature Measurements.

Single photon-based sensing applications, Entanglement-based sensing applications, atomic state-based sensing, solid-state spin-based sensing applications (gravimetry, magnetometry).

Registration Link: <https://forms.gle/KugL96DF3XKyeXvbA>

Beneficiary Name -PDPM IIITDM Jabalpur

Bank Name - INDIAN BANK

A/C No. - 50018692852

IFSC Code - IDIB000M694

Last Date of Registration- 25th September 2025

Certification Fee: Academic (Faculty / Students): ₹ 500/-

Industry Professionals / Others: ₹ 1500/-

Participants from the Rest of the World USD: US\$ 60

The fee covers course material and certification charges.



Contact for queries: Mr. Durgesh Kushwaha 789 867 0354

academy@iiitdmj.ac.in, eict@iiitdmj.ac.in