

WHO CAN PARTICIPATE

This short-term course is specifically designed for UG/PG/PhD students, researchers, faculties, and technical staff from the branches of engineering/Science who are interested in the field of quantum computing, predictive technologies, complex computational systems, and advanced algorithm programming

REGISTRATION

Name: _____

Designation: _____

Institute: _____

Address: _____

Email ID: _____

Contact No: _____

Undertaking:

I shall abide by rules and regulations and shall attend course. Failing which certificate may not be issued.

Signature of Participant

CONTACT

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Professor (HAG)

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Indian Institute of Technology (BHU), Varanasi

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Mobile No.: 8010177225

ABOUT NM-ICPS

The National Mission on Cyber-Physical Systems (NM-ICPS) is identified as one such emerging field to have a significant impact on health care, urban transportation, water distribution, energy, urban air quality, manufacturing and governance. The activities envisioned under this Mission will give an impetus to Indian manufacturing via the invention of new products, services and the creation of skilled young human resource from technicians to, researchers and entrepreneurs. It will have modernization and digitalization of socio-technical systems and services.

ABOUT I-DAPT

Interdisciplinary Data Analytics & Predictive Technologies (IDAPT) has been regarded as one of the topmost domains that may contribute significantly to socio-economic issues with its advances. Under IDAPT at IIT (BHU), few verticals such as Power, Health and Family Welfare, and Energy and Environment have been identified. The introduction of this program will result in developing professionals who will achieve the goal of "Digital India," "Innovate in India," and "Make in India."

Quantum Computing and Communication Studies at I-DAPT

R&D activities in I-DAPT seek to offer assistance in developing technology in the field of advanced communication system research with emphasis placed on quantum communication. For accomplishing such objectives, the STC "Quantum Computing and Programming with the Quokka Platform" offers students an opportunity to gain hands-on experience with the advanced communication technologies by means of a practical hardware-supported environment. Running Python and Qmod scripts using the Quokka environment, the course contributes towards the vision of I-DAPT by educating engineers in multi-qubit systems, entanglement phenomena, and basic quantum communication schemes, including superdense coding and quantum teleportation.

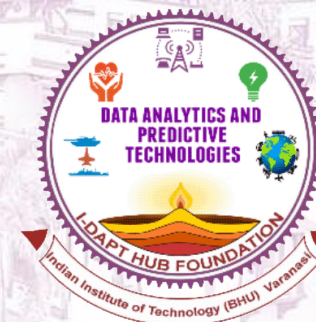
Short Term Course on

Quantum Computing and Programming Using the Quokka Platform

A TECHNOLOGY INNOVATION HUB ON

INTERDISCIPLINARY DATA ANALYTICS AND PREDICTIVE TECHNOLOGY (IDAPT)

Under NATIONAL MISSION ON INTERDISCIPLINARY CYBER PHYSICAL SYSTEM (NM-ICPS)



August 03-08, 2026

Coordinator

Dr. Bhartendu Mani Tripathi

ABOUT INSTITUTE



The Indian Institute of Technology (Banaras Hindu University) owes its existence to Mahamana Pandit Madan Mohan Malviya, Bharat Ratna-the founder of

the first residential university of modern India, the Banaras Hindu University. The three of the erstwhile engineering colleges of BHU, namely BENCO, MINMET and TECHNO, were merged to form the Institute of Technology (IT-BHU) in 1968 to provide an integrated educational base. The IT-BHU has been admitting students through the JEE conducted by the IIT's since 1972, and has been consistently ranked amongst the top few engineering institutions of the country. IT-BHU became IIT (BHU) in June 29, 2012 by an Act of Parliament. The Institute has maintained high academic standard since its inception. It has turned out luminary engineers and administrators who served the nation with great distinction.

ABOUT MED

The Department of Mechanical Engineering at Indian Institute of Technology (IIT BHU) provides an environment where experienced faculty and enthusiastic students with the help of dedicated staff, can get an opportunity to have an exclusive experience of engineering. The Department is providing programs like B.Tech., M.Tech. and PhD in Mechanical Engineering. The research thrust areas include Design, fluid and thermal, Production Engineering, renewable energy systems, and thermal energy storage systems. In addition, some continuing education courses in different interdisciplinary subjects are also conducted periodically for industrial professionals and academic staff.

EMINENT SPEAKERS

- Dr Mandar Karyakarte IIIT Allahabad
- Mr . Ramesh Nagarajan, University of Technology Sydney
- Dr Kumar Gautam : Founder & CEO, Egreen quanta
- Dr Sanjay Gandhi, Aspire skill Pune
- Dr Prashant Pund VICE president PMA Pune
- Dr Mandar Halbhavi, VP Reliance Jio Pune
- Dr. Bhartendu Mani Tripathi CST up center, IIT BHU
- Prof Shailendra Kumar Shukla, Department of Mechanical Engineering IIT BHU Varanasi

COURSE CONTENTS (Tentative)

Quantum computing is rapidly transitioning from a theoretical branch of science into a mature, applied research field. This STC bridges the gap between quantum theory and practical engineering implementation using the hardware-based Quokka educational platform. The course will cover:

- **Module 1:** Orientation, Qubits, and Gates (Python, Colab, Quokka workflow)
- **Module 2:** Multi-Qubit Systems and Protocols (Entanglement, superdense coding)
- **Module 3:** Quantum Data Encoding and Oracles (Deutsch-Jozsa algorithm)
- **Module 4:** Quantum Algorithms (Hamiltonian simulation and Grover's Search)
- **Module 5:** Advanced Quantum Synthesis (High-level design using Classiq/Qmod)
- **Module 6:** Quantum Error Correction (Syndrome measurement, Shor codes)

REGISTRATION DETAILS

Registration Link:
<https://forms.gle/uK8pVjszb47BihPJ8>

Last Date of Registration: July 31, 2026

Registration Fees (Including 18% GST)

Participation	Online	Offline
For UG, PG and PhD students:	Rs. 750	Rs. 1,500
Staff (Technical, Administrative and Others	Rs. 1,500	Rs. 3,000
For faculties, scientists and Post-doctoral Fellow	Rs. 2,000	Rs. 4,000
Industry Participants	Rs. 3,500	Rs. 7,000
International Participants	USD 100	NA

NOTE Registration fees will be Non-Refundable

Payment Mode:

Branch: SBI, IT(BHU), Varanasi
IFSC: SBIN0011445
Name: I-DAPT-HUB-FOUNDATION
Account No: 40298890505

Course Mode:

Both online and offline

In case of any difficulty, you can contact us at Mobile number; 8010177225