

Programme on

QUANTUM COMPUTING

Programme Coordinator: **Dr. P. Syam Kumar**

December 10 - 12, 2025



INSTITUTE FOR DEVELOPMENT AND RESEARCH IN
BANKING TECHNOLOGY, HYDERABAD
(ESTABLISHED BY RESERVE BANK OF INDIA)

Introduction

Quantum computing is a multidisciplinary field comprising aspects of computer science, physics, and mathematics that utilizes quantum mechanics to solve complex problems faster than on classical computers. Quantum computing has taken giant strides over the past decade, with companies like IBM, Google, IonQ and Quantinuum showcasing near-term quantum devices with hundreds of qubits. Today, there is a widespread interest in quantum computing and information in academia and increasingly in industry. Hence, there is need to understand quantum computing technology and the benefits it brings for the Banking and Financial sector. Through this programme we intend to introduce the fundamentals of quantum computing and security so as to enable the participants to become an active part of the emerging quantum ecosystem.

Objectives

- ★ To understand the fundamental concepts on quantum computing
- ★ To learn how to do computation using basic and advanced quantum algorithms
- ★ To understand random number generators for quantum
- ★ To understand communication using quantum key distribution and post-quantum cryptography

Contents

- ★ Fundamentals of Quantum Computing
- ★ Quantum Bits
- ★ Quantum Algorithms
- ★ Quantum Communications
- ★ Application of Quantum Computing
- ★ Quantum Security
- ★ Quantum Key Distribution
- ★ Post Quantum Cryptography
- ★ NIST Standardization on PQC
- ★ Cloud based Quantum Computing
- ★ Quantum AI
- ★ Quantum Blockchain
- ★ Quantum Optimization
- ★ Quantum Networks

Who can Participate?

Officers of Banks / Financial Institutions / Insurance Sector who work in IT implementation team and security management team.

Programme Coordinator

Dr. P. Syam Kumar, Assistant Professor. e-mail: psyamkumar@idrbt.ac.in.

End Use

Participants gain knowledge on quantum computers and applications. They can also learn how to use quantum technology in banking sector

Fee Details

Domestic Participants from

- ★ RRBs & Coop. Banks : Rs. 38,000 + Applicable GST
- ★ All other Banks & Fis : Rs. 45,000 + Applicable GST

The fees for our programmes can be remitted through NEFT and the bank account details for fee payment are here under:

Account Name : IDRBT
Bank : Axis Bank Limited
Branch : Humayun Nagar (Mehdipatnam Ring Road) Branch, Hyderabad
Account Number : 426010100018823
IFSC Code : UTIB0000426
GSTIN : 36AAAAI0204K1Z4.

Nominations

Nominations should be sent to us latest by **November 25, 2025** by email to hunar@idrbt.ac.in. Please note that no nominations will be accepted after this date. This measure is envisaged to further improve the quality and learning outcomes of the programmes based on participants' profile and requirements.

While nominating, please provide the details of the participants (Name, Designation, Bank, Mobile No / Phone No., email address) along with the nominating authority details (Name, Designation, Bank, Mobile No / Phone No., email address, Fee billing address, GST No. of the bank).

Accommodation

Participants will be provided Air Conditioned Single Occupancy accommodation in IDRBT, Hyderabad, with all cafeteria facilities. The Participants can check-in on the evening of the day before the commencement of the programme and can check-out after completion of the programme on the same day (or) in the morning of the next day of the programme.

Contact Us

Please contact our Programme Office for organizing Customized Programmes and/or any other queries related to programmes at hunar@idrbt.ac.in or call us on +914023294121/61/63/64/65.