

Electronics & ICT Academy IIT Roorkee



An Initiative of **Ministry of Electronics** & Information Technology (MeitY) Government of India A Faculty Development Program

on Emerging Frontiers in AI, Quantum, and Nature-Inspired Computing: **Bridging Future Technologies**

In association with Netaji Subhas University of Technology

Jun 02 - Jun 07, 2025

Register Before: May 31, 2025



Venue: Hybrid Mode at Netaji Subhas University of Technology, Dwarka sec-3, New Delhi-110078

Course Outcomes

- Ability to design and implement solutions using AI, Quantum Computing, and bio-inspired models
- Proficiency in creating Quantum Algorithms and applying them in real-world scenarios.
- Skill in securing data through Quantum Safe Cryptography and intelligent system protection.
- Practical experience in using AI for language processing, drug discovery, and optimization.
- Expertise in leveraging Evolutionary Algorithms for complex problem-solving tasks.
- Capability to apply AI and Quantum Computing solutions in industrial ecosystems like Industry 4.0.
- Confidence to lead interdisciplinary projects involving emerging and disruptive technologies.





Why this course ?

Artificial Intelligence is no longer a futuristic concept-it is embedded in the fabric of our daily lives, influencing decisions in healthcare, education, security, and governance. However, with rapid advancements come significant ethical challenges. This course is designed to provide a comprehensive understanding of these challenges and foster critical thinking about the responsible development and application of AI. With contributions from international experts and faculty from premier institutions, the course offers a unique blend of theory, policy, and practice.

Prerequisites

No experience is required, but fundamental knowledge of any programming language would be helpful.

Experts from Academia/Industry

Who Should Register?

Any Interested Faculty/PhD-Scholars UG/PG/ & Industry Persons can register

Registration Fee

Fees: ₹ 250/- Faculty/Research Scholar/ Students ₹ 500/- Industry/Others Note: Refund will be done in case of course cancellation only, with in 20 working days

FDP Kits & Refreshment will be provided

How to make Payment

Please make the payment first using the below link upload the payment receipt when filling out the Google registration form https://eict.iitr.ac.in/instruction-for-payment/

Conference Code: EICTIITR-FDP-25-41

Registration Link

https://forms.gle/WbgZKL9WCx1SnxUaA



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Scan QR for registration **Register before:** May 31, 2025

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Objectives of the course

- To impart in-depth knowledge of AI, Quantum Computing, and Nature-Inspired Computing.
- To train participants in implementing Quantum Algorithms using platforms like Qiskit.
- To build an understanding of cybersecurity frameworks for future AI and Quantum systems.
- To bridge theoretical insights with practical applications in industry and academia.
- To foster innovation in AI-based optimization, drug discovery, and autonomous systems.
- To develop interdisciplinary skills across Quantum Technology, AI, and Edge Computing.
- To enhance problem-solving capabilities using bio-inspired

Focus Areas

- Advancement of AI technologies across sectors like NLP, healthcare, and cybersecurity
- Application of Quantum Computing for optimization, simulation, and AI acceleration.
- Exploration of Nature-Inspired Algorithms for real-world problem-solving.
- Integration of Edge Computing with AI and Quantum systems for futuristic solutions.
- Cybersecurity in intelligent systems through Quantum Safe Cryptography.
- Development of AI-driven systems using Graph Theory and Evolutionary Models.
- Real-world exposure through lab sessions on Quantum AI, Edge Intelligence, and Industry 4.0

Course Features

- 40 Hours of Lectures, hands-on, and Pedagogy/Industry sessions.
- Lectures from Expert Speakers, Hands-on from industry/Academia experts.
- Access to learning materials and video lectures
- Certificate by E&ICT Academy IIT Roorkee

Who may benifits

Academic Faculty and Students(UG/PG) Government Officials. Working Professionals in the Industry and Startups.

Reasearch Scientists and Technical Staff.

This certificate can be considered in alignment with other Quality Improvement Programs (QIP) as well as NBA and NAAC for recognition/credit.

Principal Investigator

Prof. Sanjeev Manhas ECE Department, IITRoorkee

Course Coordinators

Prof. Sanjeev Manhas, IIT Roorkee Dr. Ankush Jain, NSUT

Course Co-coordinators

Dr. Vijay Kumar Bohat, NSUT Dr. Surendra Nagar, NSUT

Dr. Mohit Sajwan, NSUT

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