



ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP)

ON

Fundamentals of Quantum Computing

(17 - 28 Feb 2025)

Organized by

Electronics & ICT Academy, NIT Warangal

In Association With

Department of Computer Science and Engineering, SRGEC, Gudlavalleru, A.P. 521356.

Sponsored by

Ministry of Electronics and Information Technology (MeitY), GoI



Preamble:

"Electronics & ICT Academy – Phase II" was set up at NIT Warangal with financial assistance from MeitY, GoI. This academy's role is to offer Faculty Development Programmes in standardized courses and emerging areas of Electronics, Information Communication Technologies, training & consultancy services for Industry, Curriculum development for Industry, CEP for working professionals, Advice and support for technical incubation and entrepreneurial activities.

About the FDP:

Quantum computing is becoming increasingly popular worldwide with several countries with flagship grants and several big private companies trying to make quantum computers. One of the reasons is the strategic importance related to cryptography since Shor's quantum algorithm can break many of the existing cryptosystems. Quantum computing is also finding applications in diverse areas like finance, chemistry, Artificial Intelligence, simulation, communication, etc. This FDP offers the opportunity to become familiar with this increasingly popular and important growing technology.

Major Course Content:

- Introduction to Quantum Computing.
- Qubits, Unitary Transformations and Measurements.
- Tensor Products and Dirac Notation.
- Superdense Coding.
- Reversibility, Quantum Gates and Quantum Circuits.
- Representation of Qubits on Bloch Sphere.
- Deutsch-Jozsa Algorithm and Simon's Algorithm.
- Bernstein Vazirani Algorithm.
- Quantum Fourier Transform.
- Grover's Search Algorithm.
- Shor's Algorithm.
- Foundation of Quantum Computational Advantage.
- Quantum Algorithms for Quantum Image Processing.
- Practical Limitations on Quantum Internet.
- Post Quantum Cryptography.

Participants need to pay the Registration Fee Online using the following details

Online Transfer Details	
Account Name :	Electronics & ICT Academy NITW
Account No :	62423775910
IFSC :	SBIN0020149
Bank & Branch:	State Bank of India, NIT(REC), Warangal

Faculty conducting this Programme:

The Programme will be conducted by the faculty members from NIT Warangal, Academicians in the concerned field from IITs/NITs/IIITs are invited to deliver lectures in the programme. Speakers from industries are also expected to deliver as part of the course.

Registration Fee Particulars:

Faculty and Research Scholars	Rs.750/-
Industry Participants	Rs.2250/-

How to apply:

Participants are required to fill the online registration form by clicking on the following link:

<https://forms.gle/sev4XTPsZZvJ6xLVA>

Selection Criteria:

Selection will be done based on first-come-first-serve basis to a maximum number of participants 100 (Hundred). Candidates will be issued satisfactory certificates on successful completion of the course.

Important Dates:

Last date (Application)	08.02.2025
Selection List by E-mail	10.02.2025
Duration	17.02.2025 to 28.02.2025

About NIT Warangal:

National Institute of Technology, Warangal, is the first among 17 RECs set up as a joint venture of the Government of India and the state government. Over the years, the college has established itself as a premier Institute imparting technical education of a very high standard, leading to B.Tech degrees in various branches of engineering, M.Tech., and Ph.D. programmes in various specializations. All B.Tech and M.Tech programmes of NIT Warangal are NBA accredited.

About SRGEC Gudlavalleru:

Seshadri Rao Gudlavalleru Engineering College (SRGEC) was established in the year 1998 and is promoted by AANM & VVRSR Educational Society. SRGEC is an Autonomous institution with permanent affiliation to JNTUK, Kakinada. The college is accredited by NAAC with "A+" grade with 3.46 CGPA. All the eligible B.Tech programs of got accredited by NBA under TIER-I. SRGEC offers 9 B.Tech Programs, 5 PG M.Tech programs and a PG Program in MBA. The total intake of the college is 1590.

Coordinators:

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