



# An Initiative of Ministry of Electronics & Information Technology (MeitY) Government of India

## A Faculty Development Program

On

Cloud and Fog Computing and its Application

17/2/2025 to 21/2/2025

Under the aegis of Electronics & ICT Academy, IIT Roorkee

In the collaboration with GIET University, Gunupur (Hub) and Ajay Binay Institute of Technology Cuttack (Spoke)

### Why this course?

The Faculty Development Program is designed to enhance faculty members' understanding and practical knowledge of cloud and fog computing, exploring their architectures, key concepts, and real-world applications. The program also aims to equip participants with the skills needed to implement cloud and fog computing solutions in academic research and teaching.

### Objectives of the course

- To provide faculty members with a strong foundation in cloud and fog computing, covering key concepts, architectures, and deployment models.
- To enable participants to distinguish between cloud and fog computing, understand their unique advantages, limitations, and applications.
- To equip faculty with practical skills to set up and manage cloud-based services, deploy fog nodes, and integrate cloud-fog architectures using popular tools and platforms like AWS, Microsoft Azure, and edge devices.
- To train faculty on how to design and implement hybrid cloud-fog solutions for optimized data processing and system performance.
- To help faculty incorporate cloud and fog computing concepts into their teaching curriculum and research activities, enhancing students' learning and industry readiness.



### Focus Areas

- Overview of Cloud Computing: Definitions, characteristics, and types (public, private, hybrid, multi-cloud)
- Cloud Service Models: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS)
- Key Concepts in Cloud Computing: Virtualization, containers, and cloud storage
- Popular Cloud Platforms: Introduction to AWS, Microsoft Azure, Google Cloud Platform (GCP)
- Cloud Architecture and Components: Building blocks of cloud solutions and distributed systems
- Scalability and Load Balancing: Techniques for handling increased demand
- Cloud Data Management: Databases, data storage, and data analytics in the cloud
- Security Best Practices in the Cloud: Access control, encryption, and compliance standards (e.g., GDPR, HIPAA)
- Hybrid Cloud-Fog Architecture: How to integrate cloud and fog systems for efficient data processing
- Data Flow and Communication: Managing data transfer and processing between cloud and fog nodes
- Case Study: Real-world examples of cloud-fog integration in smart cities and industrial applications

### Prerequisites

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

### Course Features

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

### Who Should Register?

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

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

### Registration Fee

Fees: ₹ 250/participant, non-refundable (Applicable for all)  
Note: Refund will be done in case of course cancellation only within 20 working days

How to make Payment: <https://eict.iitr.ac.in/instruction-for-payment/>

Conference Code: EICTIITR-FDP-25-04

Registration Link: <https://forms.gle/T2FGopq42YhXYYP1A>

### Accommodation

Accommodation on a sharing basis will be provided based on the availability of guest rooms on a paid basis.

Accommodation charge: (INR 1200/day/person)  
Contact - sibofromgiect@giect.edu (9437234031) for booking

### Principal Investigator

Prof. Sanjeev Manhas, ECE Department, IIT Roorkee

### Course Coordinators

Dr. Raghvendra Kumar, CSE Department, GIET University

### Reach Us:

Dr. Raghvendra Kumar, CSE Department, GIET University  
Mobile Number: +91-7804068698  
Email ID: [raghvendra@giect.edu](mailto:raghvendra@giect.edu)

### Follow us on:

GIET University link and social media link

[www.giet.edu](http://www.giet.edu)



[gietuniversity](https://twitter.com/gietuniversity)



[gietuniversity](https://www.facebook.com/gietuniversity)



[gietuniversity](https://www.linkedin.com/company/gietuniversity)



[gietuniversity](https://www.youtube.com/gietuniversity)



[gietuniversitygunupur](https://www.instagram.com/gietuniversitygunupur)



[gietuniversity](https://t.me/gietuniversity)

