



# Electronics & ICT Academy IIT Roorkee



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

## A Faculty Development Program on

**Smart Biomedical Signal Processing:  
Leveraging IoT, Edge Computing, and ML**

In association with

**ABV-IIITM Gwalior**

**July 12 - July 16, 2025**

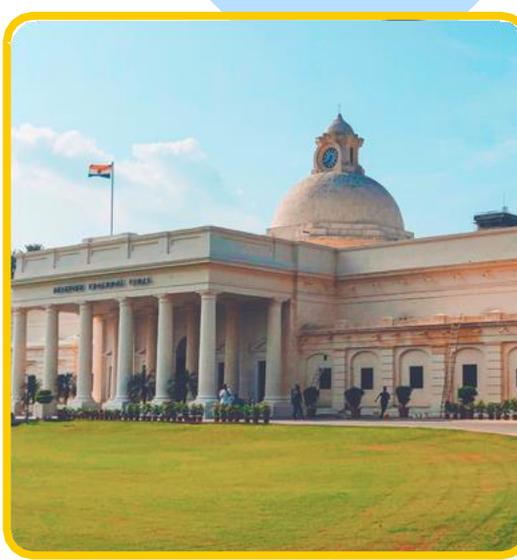
**Register Before: July 04, 2025**



**Venue: Online Mode at : ABV-IIITM Gwalior**

### Objectives of the Course

- Understand the fundamentals of biomedical signals and wearable health devices.
- Explore machine learning techniques applicable to healthcare data.
- Study edge computing and IoT-based healthcare device integration.
- Gain knowledge of deep learning and CNN models for signal analysis.
- Analyze real-time signal processing through supervised and unsupervised learning.
- Learn through hands-on lab sessions on Python, time-frequency analysis, and CNN implementation.
- Investigate compact antennas and data transmission techniques for IoT healthcare systems.



### Why this course ?

With the rising demand for real-time, AI-driven health solutions, this FDP bridges the gap between theory and practical implementation in biomedical signal processing. It combines IoT, machine learning, and edge computing to build smarter health-monitoring systems. Through expert lectures and hands-on labs, participants will acquire interdisciplinary skills essential for modern healthcare innovations. The course focuses on wearable technology, CNN architectures, and supervised learning techniques, empowering faculty and professionals to develop scalable, intelligent healthcare systems for diagnostics, monitoring, and preventive care.

### 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 made in case of course cancellation only, within 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/>

Course Code: EICTITR-FDP-5H6-21

#### Registration Link

<https://forms.gle/q9HZXSmQ7uFYmbvZ8>



Scan the QR for  
registration

Register before:  
July 04, 2025

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### Course Outcomes

- Grasp core concepts in biomedical signal processing
- Apply ML and DL techniques for real-time health monitoring
- Design and prototype IoT-enabled health systems
- Conduct advanced signal feature extraction
- Build CNN models for biomedical image and signal data
- Deploy edge AI applications in medical settings
- Understand compact antenna use in wearable and IoT health devices

### Focus Areas

- Biomedical signal acquisition and feature extraction
- Deep learning and CNN techniques for healthcare
- Edge computing and IoT device design
- Stroke patient monitoring devices
- Antennas for compact IoT systems
- Supervised vs. unsupervised learning in medical data
- Time-domain and frequency-domain signal analysis

### 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 material and video lectures
- Certificate by E&ICT Academy IIT Roorkee

### Who may benefit

- Academic Faculty and Students(UG/PG)
- Government Officials.
- Working Professionals in the Industry and Startups.
- Research 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, Head, ECE Department, IIT Roorkee

### Course Coordinators

- Prof. Sanjeev Manhas, Head, ECE Dept., IIT Roorkee
- Dr. Irshad Ahmad Ansari, ABV-IIITM Gwalior

### Reach Us:

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