



Electronics & ICT Academy IIT Roorkee



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

A Joint Faculty Development Programme

on

Next-Generation Wearable Electronics: Integrating Bio- Sensors, Edge AI, and IoT for Healthcare & Defense Systems

September 24th – October 05th, 2026

Timing: 03:00 PM to 07:00 PM

Monday to Friday

Last Date of Registration:

September 22, 2026

Mode of Delivery is Online

Course Outcomes

- Explain the principles of flexible sensors and nanomaterial-based bio-interfaces.
- Understand biosignal acquisition, instrumentation, and signal-processing techniques.
- Apply Edge AI and IoT concepts to wearable systems.
- Analyze BCI, neuro-ergonomics, and rehabilitation applications.
- Identify wearable technologies for defense, robotics, and extreme environments.
- Explore AI-driven approaches for intelligent healthcare and military wearables.
- Develop interdisciplinary perspectives for next-generation wearable electronics research.



About the Course

Wearable electronics are transforming healthcare and military systems through intelligent sensing, connected devices, and real-time analytics. This FDP provides comprehensive exposure to flexible sensors, nanomaterials, bio-interfaces, biosignal processing, edge AI, IoT telemetry, brain-computer interfaces, and neuroinformatics. Participants will explore applications in rehabilitation, robotics, exoskeletons, defense electronics, and extreme-environment wearables, gaining interdisciplinary knowledge to develop next-generation, energy-efficient, intelligent wearable systems for healthcare, defense, and human-centered applications.

Prerequisites

Basic knowledge of electronics, sensors, signal processing, and IoT is recommended. Familiarity with AI and embedded systems is beneficial but not mandatory.

Who Should Register?

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

Registration Fee

Fees: ₹ 500/- Faculty/Research Scholar/Students
₹ 1000/- Industry/Others

Note: **Refund will be done in case of course cancellation only, with in 20 working days**

How to Register

Visit the below link for registration

<https://eict.iitr.ac.in/programs/explore-courses/Course-Detail/FPD-course/366/joint-fdp-on-next-generation-wearable-electronics-integrating-bio-sensors-edge-ai-and-iot-for-healthcare-defense-systems/>

Course Code: EICTIITR-JFDP-NKN-S-26-17



Scan QR for
registration

Last date of Registration:
September 19, 2026

Click on icon to follow us on:



Objectives of the Course

- Understand flexible sensors, nanomaterials, and bio-interface technologies.
- Explore biosignal acquisition, processing, instrumentation, and readout circuits.
- Introduce edge computing, Edge AI, and IoT telemetry for wearable systems.
- Examine Brain-Computer Interfaces, neuro-ergonomics, and rehabilitation technologies.
- Explore wearable applications in defense, robotics, exoskeletons, and extreme environments.
- Develop interdisciplinary understanding of AI-enabled wearable healthcare and military systems.

Focus Area

- Flexible Sensors, Nanomaterials, and Bio-Interfaces
- Bio-Signal Processing and Electronics
- Advanced Signal Processing and Time-Series Analytics
- Edge AI and IoT Telemetry
- Brain-Computer Interfaces and Neuro-Ergonomics
- Defense Electronics, Robotics, and Exoskeletons
- Tactical and Extreme-Environment Wearables
- AI at the Edge and Neuroinformatics

Course Features

- 40 Hours of Lectures, Hands-on, and Pedagogy/Industry sessions.
- Lectures from Expert Speakers, Hands-on from industry/Academia experts.
- A Joint Certificate by E&ICT Academy IIT Roorkee

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

Principal Coordinator

- Prof. Sanjeev Manhas, Head, ECE Department, IIT Roorkee

Joint Principal Coordinator

- Dr. Tharun Kumar Reddy, ECE Dept. IIT Roorkee

Course Instructor

- Dr. Tharun Kumar Reddy, ECE Dept. IIT Roorkee

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