Electronics & ICT Academy
IIT Roorkee

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

A Joint Faculty Development Program

By

IIT Roorkee, NIT Patna, IIITDM Jabalpur, MNNIT Jaipur

on

IoT Applications with Sensors, Embedded Systems, and Data Analytics

Feb 17 – Feb 28, 2025
4:00 PM – 8:00 PM
Register Before: Feb 13, 2025

Mode of Delivery : online
Cisco Webex

Objectives of the course

- To introduce participants to the foundational concepts of IoT and its applications in real-world scenarios.
- To familiarize participants with IoT programming environments and Arduino hardware.
- To enable participants to build IoT systems using hands-on experimentation on digital/analog I/O, serial communication, and advanced protocols.
- To teach participants how to connect IoT devices to cloud platforms for data collection, processing, and analytics.
- To encourage critical thinking and problem-solving skills through hands-on experimentation, quizzes, and project-based learning.
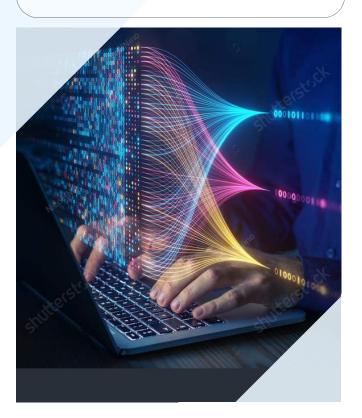
About E&ICT Academy

Electronics and ICT Academy is an initiative of Ministry of Electronics & Information Technology (MeitY), Govt. of India for conducting various Faculty/ Research Scholar Development Programme. Academy has planned short-term training programs on fundamental and advanced topics in IT, Electronics & Communication, Product Design, and Manufacturing with hands-on training and project work using the latest software tools and systems. In addition, the Academy will conduct specialized/customized training programs and research promotion workshops for corporate sector & educational institutions.

Prerequisites

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

Focus Areas

- **IoT Fundamentals:** Introduction to IoT and its applications.
- **Hardware and Platforms:** Arduino hardware, Tinkercad for simulations, and hands-on prototyping.
- **Programming and Communication:** IoT programming environments, serial communication, and protocols like UART, I2C, and SPI.
- **Networking and Cloud Integration:** WiFi, LoRaWAN, cloud platforms, and IoT databases.
- **Data Analytics in IoT:** Collecting, processing, and analyzing data from IoT devices using cloud-based tools and databases.

Course Outcomes

Participants are likely to:
- Understand the fundamental concepts of IoT, including platforms, hardware, and communication protocols.
- Apply hands-on skills using platforms like Tinkercad, Arduino, and cloud databases for IoT experimentation.
- Develop IoT prototypes using digital and analog I/O, communication protocols (UART, I2C, SPI), and networking technologies such as WiFi and LoRaWAN.
- Integrate IoT devices with cloud platforms to collect, process, and analyze data.
- Demonstrate effective pedagogy strategies for teaching IoT concepts and tools.

Experts from Academia/Industry

Who Should Register?

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

Registration Fee

Fees: ₹ 500/- Faculty/Research Scholar
Note: Registration Fee is Refundable if the cancellation request is submitted before the last date of registration.

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-25-19

Registration Link

https://forms.gle/QLA5wJuUz3duBC9h6

Scan QR for registration

Register before:
Jan 07, 2025

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Resourse Person

- Prof. Rahul Thakur, IIT Roorkee
- Prof. Sudeepta Mishra, IIT Ropar
- Dr. Anbumunee Ponniah, Chief Technical Officer, IBM India

Principal Investigator

Prof. Sanjeev Manhas
ECE Department, IIT Roorkee

Principal Coordinator

- Prof. Sanjeev Manhas
- Prof. Rahul Thakur

Joint Principal Coordinators

- Prof. Rahul Thakur, IIT Roorkee
- Prof. M.P Singh, NIT Patna
- Prof. Shyam Singh Rajput, NIT Patna
- Prof. Vijay K. Gupta, IIITDm Jabalpur
- Prof. Amit M. Joshi, MNNIT jaipur

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

Reach Us :

📱 M.No.: 8112766397
☎ Landline No.: +91-1332286457
✉ Email: eict@iitr.ac.in