Electronics & ICT Academy IIT Roorkee

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

A Faculty Development Program
on
IoT: Recent Advances, Challenges, and Opportunities (IoT: RACO)

In association with

Brainware University, Barasat, Kolkata

May 24th – May 28th , 2025

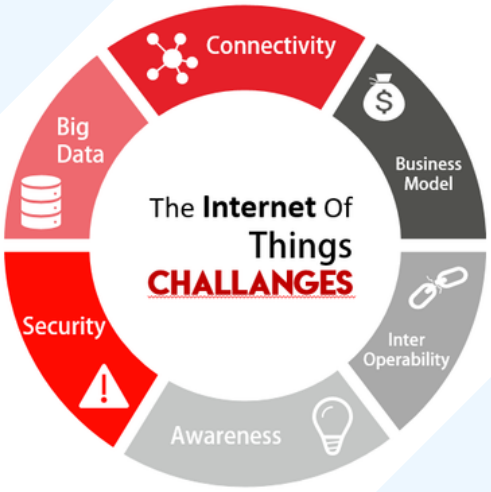
Timings: 09:00 AM – 6:00 PM

Register Before: May 22nd, 2025

Venue: Hybrid Mode at Brainware University, Barasat, Kolkata

Objectives of the Course

- Understand IoT architecture and recent technological developments
- Develop and prototype basic IoT applications
- Interface sensors and microcontrollers for data collection
- Utilize cloud services for data storage and analysis
- Identify security risks and apply protection strategies
- Explore interdisciplinary IoT use cases and solutions
- Guide students in building IoT-based academic or industry projects



Why this course ?

The rapid evolution of the Internet of Things (IoT) is transforming industries, creating smart environments, and enabling data-driven decision-making. This course is designed to equip faculty with foundational knowledge and practical skills in IoT technologies, architectures, and real-world applications. As IoT becomes central to innovations in healthcare, agriculture, manufacturing, and smart cities, understanding its challenges—such as security, scalability, and interoperability—is crucial. This FDP empowers educators to integrate IoT concepts into curricula and guide students in research and project development aligned with industry trends.

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 done in case of course cancellation only, with in 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/

EICT Course Code: EICTIITR-FDP-5H6-07

Registration Link

https://forms.gle/qbjrCRmfJr4xKTY88

Scan QR for registration

Register before:
July 22nd , 2025

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Course Outcomes

- To introduce the fundamentals and architecture of the Internet of Things (IoT).
- To explore recent advancements in IoT devices, platforms, and protocols.
- To understand sensor integration, data acquisition, and cloud connectivity.
- To examine challenges related to scalability, security, and interoperability.
- To provide hands-on experience with IoT development tools and frameworks.
- To highlight real-world applications across industries like healthcare, agriculture, and smart cities.
- To enable faculty to mentor students and initiate interdisciplinary IoT projects.

Focus Areas

- IoT architecture, layers, and communication protocols
- Sensor networks, edge computing, and cloud platforms
- Embedded systems and microcontrollers (e.g., Arduino, ESP32, Raspberry Pi)
- IoT data analytics and real-time monitoring
- Cybersecurity and privacy in IoT systems
- Industrial applications and smart environments
- Standards, trends, and regulatory frameworks

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 benifits

- 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
ECE Department, IIT Roorkee

Course Coordinators

- Prof. Sanjeev Manhas, IIT Roorkee
- Dr. Sushmita Chaudhari, Brainware University, Barasat, Kolkata

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