

AICTE Training and Learning (ATAL) Academy approved

FDP on Internet of Things and Real Time Applications

Department of Electronics Engineering

Indian Institute of Technology (BHU)

Varanasi - 221005

September 21-25, 2020

Course Objectives:

Due to rapid advancements in sensing, mobile computing and server technologies life style has completely changed. The Internet of Things (IoT) is the collection of embedded devices wherein sensors are enabled with different communication means. Although it's just beginning, by 2025, the estimated number of connected devices should reach 100 billion. IoT offers advanced control and monitoring services which improve the efficiency of existing methods. Therefore, it is essential to create awareness, educate and train the research scholars as well as faculty members to the amazing world of IoT. With this aim, IoT and real time applications course is planned and the objectives of this course are:

1. Overview of IoT, Various IoT Platforms and their Architectures
2. Introduction to Mbed Operating System
3. Various communication protocols for IoT
4. System level design and device management
5. Introduction to latest sensors and actuators
6. Interfacing of sensors and actuators and real time data monitoring
7. An Overview of Machine Learning in IoT
8. Case study of Spatial Standards for IoT: Small Towns to Smart Cities
9. Case study of Smart Healthcare Systems using IoT

Target Audience: AICTE approved Institutions-Faculty Members, Research Scholars, Master Research Students and Industry Professionals

Venue: **Online Mode**

Speakers: Subject experts will be drawn from premier institution like IITs, NITs, IISc and from industry.

Tentative Course Schedule:

Days	10:00 to 11:30	11:30 to 12:00	12:00 to 1:30	1:30 to 2:30	2:30 to 4:00
21/9	Session - 1 Internet of Things -Overview	B R E A K	Session - 2 IoT Systems: Various Platforms and their Architectures-I	B R E A K	Session - 3 IoT Systems: Various Platforms and their Architectures-II
22/9	Session - 4 An introduction to MbedOperating System		Session - 5 An introduction to Various APIs in Mbed Operating System		Session - 6 Device Management for Mbed Operating System
23/9	Session - 7 Sensor Interfacing and Real Time Issues		Session - 8 Real Time Data Monitoring		Session - 9 Smart Healthcare Systems using Internet of Things
24/9	Session - 10 Communication protocols for Internet of Things		Session - 11 Spatial Standards for Internet of Things: Small Towns to Smart Cities		Session - 12 Internet of Things for Smart Cities Interoperability and Open Data
25/9	Session - 13 An Overview of Machine Learning in Internet of Things		Session - 14 Security measurements in internet of things		Session - 15 Quiz/Feedback/ interaction and Valediction

About Institute: The Indian Institute of Technology (Banaras Hindu University) owes its existence to Mahamana Pandit Madan Mohan Malviya, Bharat Ratna-the founder of the first residential university of modern India, the Banaras Hindu University. The three of the erstwhile engineering colleges of BHU, namely BENCO, MINMET and TECHNO, were merged to form the Institute of Technology (IT-BHU) in 1968 to provide an integrated educational base. The IT-BHU has been admitting students through the JEE conducted by the IIT's since 1972, and has been consistently ranked amongst the top few engineering institutions of the country. IT-BHU became IIT (BHU) in June 29, 2012 by an Act of Parliament. The Institute has maintained high academic standard since its inception. It has turned out luminary engineers and administrators who served the nation with great distinction.

About Department: Department of Electronics Engineering came into existence as an offshoot of Electrical Engineering Department in the year 1971 (when Banaras Engineering College, College of Mining and Metallurgy and College of Technology had been amalgamated to form the Institute of Technology in its present form). The intake every year of the Department is 79 in the B. Tech. level and 47 in the M. Tech. level. Besides teaching students of our own discipline (Electronics Engineering), we also offer the basic courses in Electronics Engineering to almost all the Departments of the Institute, we also teach advanced-level courses to the students of Electrical and Computer Engineering Departments.

Course Coordinator

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