

ABOUT MAEER's MIT College Of Engg.

Maharashtra Academy of Engineering & Education Research (MAEER), Pune established in 1983 is a well-known educational trust with 64 Institutions delivering KG to PG education. MAEER is truly multi-campus and multi-disciplinary organization conducting university approved academic programs in Engineering, Management, Pharmacy, Medicine and Polytechnic. Approximately 60,000 students study in various institutions of MAEER at any one time. The student community represents entire cross section of the country. The ethos of value based education system is strictly followed in all our institutions to promote good character building among the young generation. In recognition of the services rendered so far a UNESCO chair in human rights, democracy and peace was constituted at MAEER's MIT, PUNE. MIT College of Engineering is affiliated to Savitribai Phule Pune University and it is approved by AICTE, Delhi. The college is located in the MIT Campus, Kothrud, Pune 411038

ABOUT DEPARTMENT

The Department of Information Technology was started in the year 2001. Department is NBA accredited and also ranked in NIRF ranking survey in last two years. The department offers UG and PG Programmes. It has excellent infrastructure facilities and faculty. The department has started R&D project in collaboration with industry

ABOUT ioCare

ioCare has more than 10 years of expertise in embedded and internet domain, they provide turnkey solutions based on embedded system & Internet of Things. ioCare provide IoT solutions in domains such as public safety, healthcare, connected mobility, connected home, and smart cities. With ioCare you can build and operate connected automation solutions. They have complete embedded software, hardware and cloud design capabilities.

KEY NOTE SPEAKER

Dr. Parikshit Mahalle
[BOS IT-SPPU Pune]

SPEAKER / EXPERT

Mr. Rajendra Khope,
[CTO ioCare, Pune]

SCHEDULE

Date	Topic	Time
11/01/2019	IOT using Arduino, Raspberry pi, Setup and Interfacing	9:30 am to 5:00 pm
12/01/2019	Data Acquisition and storage, Cloud & Data Analytics	9:30 am to 5:00 pm

REGISTRATION FEES

Registration Fees	Amount
Faculty / PG Students	RS 500/-

REGISTRATION FORM

<https://goo.gl/forms/gV3MD2vjEzI6jMGi2>



MIT College of Engineering, Pune

Department of Information Technology

Organizes

Two Days Workshop

on

“IoT Data Acquisition & Analytics using Cloud Computing”

11th-12th January 2019

In Association with

SPPU, Pune & ioCare, Pune



Venue

Research Laboratory (A-306)

Department of Information Technology

MAEER's, MIT College of Engineering,

Paud Road, Kothrud, Pune-411038

OUR STRENGTH

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MAEER's MIT Group of Institutions, Pune, India.

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ABOUT WORKSHOP

This WORKSHOP enables the learners to get acquainted with the Internet of things concepts, research directions and hands-on exposure to IoT platforms. It is open to all individuals who want to integrate IoT into their data investigative skills and acquire the real data and communicate to cloud storage devices. IoT is home for creative problem-solvers who want to use data strategically to advance society.

These data promise to revolutionize healthcare, food, agriculture and all domains. Full cycle of IoT needs to be understood in order to design the projects in Smart City like applications in various business and social domains.

OBJECTIVES

- To understand basics of IoT platforms for sensing real and physical data.
- To give practical hands-on exposure in the domain of IoT data acquisition.
- To understand IoT data collection, communication and storage in cloud computing.

OUTCOMES

The participants will be able to

- Perform Sensor interface with IoT kits such as RaspberryPi and Arduino.
- Data acquisition and processing and transmission to central storage.
- Storage and analytics of data with Cloud computing.

WORKSHOP COVERAGE

- Automation, Basics of Internet of Things and its applications, Embedded System, hardware platforms and software platforms.
- Understanding ESP8266 Board structure, Installing and setting up tool chain, Programming ESP8266.
 - Arduino Basics
 - Direct programming
 - Compiling
 - Hello World
 - Blink LED

- Raspberry-Pi HW & OS Installation, Description & Hardware specifications of GPIO, Interacting & configuring the RPi OS, Remote Login methods: SSH, VNC, Understanding device communication over network and Understanding Cloud server for IoT.
- Interfacing Sensors and Actuators.
 - Different types of I/O Devices.
 - Switches, Relays, LED and display devices.
 - Interfacing Analog sensors.
 - Talking with digital sensors.
 - Assignments.
- Cloud Interfacing.
 - Getting Data from cloud.
 - Updating data to cloud.
 - Remote control your device.
 - Creating your own cloud web service.
 - Understanding existing IoT cloud services – Google IoT, AWS, IBM.
- Data Storage systems, Data Analytics, Online IoT Testbeds, IoT simulation using Qualnet Simulator 8x.

IOT Laboratory

Lab 1 Study of Raspberry-Pi, Beagle board, Arduino.

Lab 2 Study of different operating systems for Raspberry-Pi/Arduino.

Lab 3 Simple program- Digital read/write using LED and Switch. Analog read/write using sensor and actuators.

Lab 4 Upload data from environmental sensor to cloud server.

Lab 5 MQTT/ CoAP and sending sensor data to cloud

Lab 6 Design a web control of LEDs remotely using Raspberry-Pi /Arduino.

Lab 7 Demonstrate XMPP server and an application on Raspberry Pi/Arduino.

Lab 8 Demonstrate Apache server and an application on Raspberry Pi/Arduino.