Agro Doctor

TEAM_BUBT

In Collaboration with IEEE BUBT Student Branch

BUBT

Sensor to Solution

IoT Workshop & Hackathon

IoT Workshop Rulebook

Smart Agriculture + IoT Innovation

Learn. Build. Innovate. Compete.

Section 1: IoT Workshop

Event Details

Venue: BUBT Cafeteria

Theme: Smart Agriculture + IoT Innovation

Status: Registration Open

Registration: Workshop Reg: 150 BDT

Contact

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Hands-on learning path: Microcontroller - Sensors - IoT Communication - Dashboard - Smart Application

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1. Workshop Overview

The IoT Workshop is the first section of the event. It is designed for students, beginners, and technology enthusiasts who want to understand IoT from basic concepts to hands-on smart agriculture applications.

Main Focus: Internet of Things, ESP32 or microcontroller programming, sensor integration, IoT communication, dashboard monitoring, and practical project development.

2. Workshop Objectives

- Introduce participants to the fundamentals of IoT and embedded systems.
- Teach microcontroller setup and basic programming workflow.
- Demonstrate how sensors collect real-world environmental data.
- Show how IoT devices can send data to dashboards or cloud platforms.
- Prepare participants for the hackathon challenge section.

3. Learning Modules

Module	Content
Module 1	**IoT fundamentals, smart agriculture use cases, and system architecture.**
Module 2	**ESP32 / Arduino / NodeMCU introduction, IDE setup, and basic code upload.**
Module 3	**Sensor integration: soil moisture, temperature, humidity, light, water level, or related sensors.**
Module 4	**IoT communication: WiFi, serial monitor, cloud/dashboard concepts.**
Module 5	**Smart agriculture mini-project workflow and hackathon preparation.**

4. Participant Guidelines

- Participants must arrive on time and complete registration before joining the session.
- Participants should bring a laptop if available.
- Participants must follow trainer and volunteer instructions during hands-on practice.
- Hardware components must be handled carefully and returned if provided by organizers.
- Participants should maintain discipline, teamwork, and respect throughout the workshop.
- Using the workshop for unsafe electrical connections or unauthorized experiments is not allowed.

5. Workshop Practice Tasks

Practice 1: Microcontroller Setup
Install or configure the required tools and prepare the microcontroller for coding.

Practice 2: Sensor Data Reading
Connect a sensor and read real-time values using serial monitor or display output.

Practice 3: Simple Decision Logic
Create a basic condition such as low soil moisture, high temperature, or alert status.

Practice 4: Dashboard Concept
Understand how sensor data can be visualized in a web, mobile, cloud, LCD, or OLED dashboard.

6. Completion Criteria

- Attend the workshop session actively.
- Complete the hands-on practice tasks or participate in team practice.
- Follow safety and discipline rules.
- Join the hackathon orientation if participating in the second section.

7. Benefits

- Certificate
- Food
- Practical IoT knowledge
- Basic project-building experience
- Preparation for hackathon participation
- Networking opportunity