BCSE0232: INTERNET OF THINGS LAB

Objective: *Coordinate and help to increase and optimize the utilization of results and value creation in the area of IoT.*

Credits: 01 **L–T–P: 0–0–2**

Module No.	Content	Lab Hours
I/II/III	• WAP to interface and blink the LED using Arduino UNO. • WAP to interface for different sensors (Like DHT11, temperature, IR, Ultrasonic etc) to Arduino UNO. • WAP to interface temperature sensor to ESP8266. Turn on the LED if temperature value met threshold value. • WAP to interface in between Bluetooth module and Arduino UNO. • Write a python program for Gateway to store sensor data on local MySQL database. • WAP to transmit the data wirelessly for longer distance using multi-hop technique. • Configure the gateway as local MQTT broker (Mosquitto), configure one ESP8266 as sender (Publisher), and receive the data on the Smartphone (MQTT Dashboard).	12*2=24

Text Books:

- UpSkill Learning (2018), "ESP8266: Programming NodeMCU Using Arduino IDE - Get Started With ESP8266 (Internet Of Things, IOT, Projects In Internet Of Things, Internet Of Things for Beginners, NodeMCU Programming, ESP8266)"

Outcome: After completion of course, student will be able to:

- CO1: Students will be able to identifying the technical problems and be proficient in the analysis, design, test, and implementation of instrumentation and control systems utilizing appropriate software and hardware tools and devices.
- CO2: Understand the functionality of system components/devices for the automation of processes.