MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA-8
(Affiliated to Krishna University, Machilipatnam)
SYLLABUS

Subject: Computer Science **Semester: V**
Course Title: IoT - Practical **Course Code: 20CSP621IT2**
No. of Hours: 45 **LTP: 003** **Credits: 2**

Objectives

- To implement skills to design a small IoT device
- To design and develop IoT based sensor systems

Course Outcomes

CO1: Connect various sensors, actuators, etc to Arduino board.
CO2: Design a small mobile app to control the sensors.
CO3: Deploy a simple IoT device.

List of Practicals: **(30 Hrs.)**

1. Understanding Arduino UNO Board and Components
2. Installing and work with Arduino IDE
3. Blinking LED sketch with Arduino
4. Simulation of 4-Way Traffic Light with Arduino
5. Using Pulse Width Modulation
6. LED Fade Sketch and Button Sketch
7. Analog Input Sketch (Bar Graph with LEDs and Potentiometre)
8. Digital Read Serial Sketch (Working with DHT/IR/Gas or any other Sensor)
9. Working with Adafruit Libraries in Arduino
10. Spinning a DC Motor and Motor Speed Control Sketch
11. Working with Shields
12. Design APP using Blink App or Things peak API and connect it LED bulb.
13. Design APP Using Blink App and Connect to Temperature, magnetic Sensors.

Skill/Hands-on: Field Work/Mini Project (15 Hrs.)

1. Choosing a Problem for IoT solution (agriculture, aquaculture, smart home appliances, testing moisture levels, oxygen levels, etc), reasons why IoT solution is feasible for the said problem, material required, Design and architecture for the proposed IoT device, method of implementation and how to connect the device to mobile.

Prescribed Text Book

1. Vijay Madisetti and ArshdeepBahga, “Internet of Things (A Hands-onApproach)”, 1st Edition, VPT, 2014.

Reference Text Book

1. Internet of Things - A Hands-on Approach, ArshdeepBahga and Vijay Madisetti, Universities Press, 2015, ISBN: 9788173719547.

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Practical-Scheme of Valuation

Time: 3 Hrs. **Max. Marks: 50**

Practical	**Marks**
Program Writing	15 M
Program Execution	15 M
Viva	10 M
Practical Record	10 M
Total	**50 M**