

## **18MC313 INTERNET OF THINGS**

### **Course description and objectives:**

This course focuses the concepts of things integrated with the physical world and the cyber space. Further, it helps students to design & develop IOT applications.

### **Course Outcomes:**

The student will be able to:

- Understand the application areas of IOT.
- Realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks.
- Understand building blocks of Internet of Things and characteristics.
- Design and develop IoT applications for given specific problem statement.

### **Skills:**

- Case studies on IoT applications.
- Writing Python scripts for IoT circuits.
- Utilizing the general-purpose pins of suitable IoT supported COB.

### **Activities:**

- Sensing or actuating devices using Raspberry Pi kits.
- Create a successful IoT product.

## **Syllabus**

### **UNIT – 1**

**12 Hours**

INTRODUCTION & CONCEPTS: Introduction to Internet of Things, Physical Design of IOT, Logical Design of IOT, IOT Enabling Technologies, IOT Levels.

### **UNIT – 2**

**12 Hours**

DOMAIN SPECIFIC IOTS: Home Automation, Cities, Environment, Energy, Retail, Logistics, Agriculture, Industry, Health & Life Style.

### **UNIT – 3**

**12 Hours**

DEVELOPING INTERNET OF THINGS & PYTHON: Introduction IOT Design Methodology, Installing Python, Python Data Types, Lists, Tuples, Dictionaries, Strings

### **UNIT – 4**

**12 Hours**

LOGICAL DESIGN USING PYTHON: Control Flow, Functions, Modules, Packages, File Handling, Date/ Time Operations, Classes, Python Packages

### **UNIT – 5**

**12 Hours**

IOT PHYSICAL DEVICES & ENDPOINTS: An IOT Device, Exemplary Device, Board, Linux on Raspberry Pi, Interfaces, and Programming of IOT Devices.

**Text Books:**

Vijay Madiseti, ArshdeepBahga,” Internet of Things A Hands-On- Approach”, 1<sup>st</sup> Edition,Orient Blackswan Private Limited,2014.

**Reference Books:**

1. Adrian McEwen, “Designing the Internet of Things”, 1<sup>st</sup> Edition, Wiley Publishers, 2013.
2. Daniel Kellmerit, “The Silent Intelligence: The Internet of Things”,1<sup>st</sup> Edition, DND Ventures LLC, 2013.