MSCS306 INTERNET OF THINGS (IoT) (3-0-0)

MODULE I (9 Hrs.)
Introduction to Internet of Things Introduction-Definition & Characteristics of IoT , Physical Design of IoT- Things in IoT , IoT Protocols, Logical Design of IoT- IoT Functional Blocks, IoT Communication Models, IoT Communication APIs , IoT Enabling Technologies- Wireless Sensor Networks , Cloud Computing, Big Data Analytics , Communication Protocols , Embedded Systems, IoT Levels & Deployment Templates.
MODULE II (9 Hrs.)
Domain Specific IoTs Home Automation, Intrusion Detection,Smoke/Gas Detectors, Application of IoT for Smart Cities, Application to Environment , Energy Applications, Retail Applications, Logistics Applications, Agriculture-,Industry Applications of IoT,Health & Lifestyle Applications and M2M Introduction M2M-Difference between IoT and M2M,SDN and NFV for IoT-Software Defined Networking , Network Function Virtualization
MODULE III (9.Hrs)
IoT Platforms Design Methodology-IoT Level Specification, Functional View Specification ,Operational View Specification,Device & Component Integration, Application Development, Motivation for Using Python IoTPhysical Devices &Endpoints,Exemplary Device: Raspberry Pi, Raspberry Pi Interfaces – Serial, SPI , I2C , Programming Raspberry Pi with Python-Controlling LED with Raspberry Pi , Interfacing an LED and Switch with Raspberry Pi ,Interfacing a Light Sensor (LDR) with Raspberry Pi , Other IoT Devices- pc Duino, Beagle Bone Black , Cubieboard
MODULE IV (9 Hrs.)
IoT& Beyond: Use of Big Data and Visualization in IoT, Industry 4.0 Concepts. Overview of RFID,Low-power design (Bluetooth Low Energy), range extension techniques (data mining and mesh networking), and dataintensiveIoT for continuous recognition applications. Overview of Android / IOS App Development tools & Internet of Everything

Text Books :
1. Rajkamal,"Internet of Things", 2nd Edition, 2022, Tata McGraw Hill publication.
2. Vijay Madisetti and ArshdeepBahga, "Internet of things(A-Hand-on-Approach)" 1st Edition, 2015, Universal Press.

Reference Books :
1. Charless Bell "MySQL for the Internet of things". 1st Edition, 2016, Apress publications.
1. 2. Francis dacosta "Rethinking the Internet of things:A scalable Approach to connecting everything", 1st edition, 2014, Apress publications.