

IOT TECHNOLOGY [As per Choice Based Credit System (CBCS) scheme] (Effective from the academic year 2016 -2017) SEMESTER – VIII			
Subject Code	15CS81	IA Marks	20
Number of Lecture Hours/Week	4	Exam Marks	80
Total Number of Lecture Hours	50	Exam Hours	03
CREDITS – 04			
Course objectives: This course will enable students to			
<ul style="list-style-type: none"> • Explain the basics of IOT and its applications • Illustrate the design principles of connected devices • Contrast web communication protocols used by connected IoT/M2M devices • Apply the data-acquiring and data storage functions for IoT/M2M devices data and messages • Explain sensor technology for sensing the real world entities with examples 			
Module – 1			Teaching Hours
Internet of Things: An overview: IoT conceptual framework, IoT architectural view, Technology behind IoT, Sources of IoT, M2M communication, Examples of IoT.			10 Hours
Module – 2			
Design Principles for connected devices: Introduction, IoT/M2M system layers and design standardization, Communication technologies, data enrichment, Data consolidation and device management at gateway, ease of designing and affordability			10 Hours
Module – 3			
Designing principles for Web connectivity: Introduction, Web communication protocols for connected devices, Message communication protocols for connected devices, Web connectivity for connected devices. Internet connectivity principles: Introduction, Internet connectivity, Internet - based communication, IP addressing in IoT			10 Hours
Module – 4			
Data acquiring, organising, processing and analytics: Introduction, Data acquiring and storage, organizing the data, Analytics. Data collection, storage and computing using cloud platform: Cloud computing paradigm			10 Hours
Module – 5			
Sensors and wireless sensor networks: Introduction, Sensor technology, Participatory sensing, Industrial IoT and Automotive IoT, Sensor Data Communication Protocols, RFID Technology, Wireless sensor networks technology – WSN architecture, WSN IoT applications			10 Hours
Course outcomes: The students should be able to:			
<ul style="list-style-type: none"> • Explain what IoT is, its framework along with examples • Summarize the design standardization of IoT/M2M architectural layers and domains • Illustrate the usage of message protocols between connected devices and the web • Identify the functions and usage of data analytics and data visualizations for IoT applications 			

- Discuss WSN IoT applications

Question paper pattern:

The question paper will have ten questions.

There will be 2 questions from each module.

Each question will have questions covering all the topics under a module.

The students will have to answer 5 full questions, selecting one full question from each module.

Text Books:

1. Raj Kamal: Internet of Things – Architecture and Design Principles, McGraw Hill Publications, 2017

Reference Books:

1. Arshdeep Bahga and Vijay Madisetti: Internet of Things- A hands-on approach, University Press (India) publication, 2015
2. Timothy Chou: PRECISION – Principles, Practices and Solutions for Internet of Things, McGraw Hill Publications, 2017