

Subject Code	Subject Name	Credits
26CS116	INTERNET OF THINGS (IoT)	4

Course Objectives

1. To understand the basics of IoT's
2. To learn its role in technical and business spheres
3. To understand its architecture and its various layers

Learning Outcomes

After the completion of the course, the graduate will be able to

1. To learn about 5g networks and its impact on IoT's

Unit 1 - Application of IoT (12 Hrs.)

What is IoT? Application of IoT - System architecture - IoT devices - Network model - Event Analysis - IoT architecture - Security - Systems and Network security

Unit 2 - Technical and Business Innovators of industrial Internet (12 Hrs.)

Technical and Business Innovators of industrial Internet - Miniaturization - Cyber Physical Systems - Cloud and Fog - Augmented Reality

Unit 3 - Architecture for IoT using Mobile Devices (12 Hrs.)

Architecture for IoT using Mobile Devices - Mobile Technologies for supporting IoT Ecosystem - Software Defined Networking - Network Function Virtualization - 5G Technology - Mobile use case for IoT

Unit 4 - Layered Architecture for IOT (12 Hrs.)

Layered Architecture for IOT - Object layer - Object Abstraction layer - Service Management layer - Application layer - Business Layer – Protocol Architecture of IoT - Infrastructure Protocol - Routing Protocol - IoT Communication Protocol Requirements - IoT Portion for smarter Enterprises and Environments

Unit 5 - 5G Narrowband Internet of Things (12 Hrs.)

5G Narrowband Internet of Things - NB - IOT Applications - Massive number of Low Throughput Devices - Low Latency and Data Reporting - LTE NB - IoT Protocol stack and Architecture - NB - IoT Modes of operation - MAC Architecture - Procedures - Data Transfer

References:

1. Dimitrios Serpanos, "Internet of Things Systems, Architectures. Algorithms, methodologies" © Springer International Publishing AG
2. Pethuru Raj "The Internet of Things, Enabling Technologies, Platforms and Use cases, CRC Press, Taylor & Francis group.
3. Alasdair Gilchrist, "The industrial Internet of Things", Published by Apress.
4. Hossam Fattah, "5G LTE Narrowband Internet of Things," Published by Taylor and Francis