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Course Objectives

- The main objective of this course is to learn the Internet, which is evolving to connect people to physical things and also physical things to other physical things all in real time.

UNIT I	INTRODUCTION TO IOT	9 Hours

What is the IoT and why is it important? Elements of an IoT ecosystem, Technology drivers, Business drivers, Trends and implications, Overview of Governance, Privacy and Security Issues.

UNIT II	IOT PROTOCOLS	9 Hours

Protocol Standardization for IoT – Efforts – M2M and WSN Protocols – SCADA and RFIDProtocols – Issues with IoT Standardization – Unified Data Standards – Protocols – IEEE802.15.4–BACNet Protocol– Modbus – KNX – Zigbee– Network layer – APS layer – Security

UNIT III	IOT ARCHITECTURE	9 Hours

IoT Open source architecture (OIC) - OIC Architecture & Design principles- IoT Devices and deployment models- IoTivity : An Open source IoT stack - Overview- IoTivity stack architecture- Resource model and Abstraction.

UNIT IV	WEB OF THINGS	9 Hours

Web of Things versus Internet of Things – Two Pillars of the Web – Architecture Standardization forWoT– Platform Middleware for WoT – Unified Multitier WoT Architecture – WoT Portals and Business Intelligence.

UNIT V	IOT APPLICATIONS	9 Hours

IoT applications for industry: Future Factory Concepts, Brownfield IoT, Smart Objects, Smart Applications. Study of existing IoT platforms /middleware, IoT- A, Hydra etc.

UNIT VI	LATEST TREND	9 Hours

Latest trends on IoT Platforms

TOTAL PERIODS: 45

Course Outcomes:

- Understand the basic concept of Internet of Things
- This course enables student to understand the basics of Internet of things and protocols.
- Students will learn about the middleware for Internet of Things.
- To understand the concepts of Web of Things

Text books:

1. Honbo Zhou, "The Internet of Things in the Cloud: A Middleware Perspective", CRC Press,2012.
2. Dieter Uckelmann, Mark Harrison, Michahelles, Florian (Eds), "Architecting the Internet of Things", Springer, 2011.

Reference Books:

1. Vijay Madisetti and Arshdeep Bahga, "Internet of Things (A Hands-on-Approach)",1st Edition, VPT, 2014.
2. Francis da Costa, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", 1st Edition, Apress Publications, 2013.