

IV Year B.Tech. CSE I - Semester

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CS445 INTERNET OF THINGS (ELECTIVE IV)

Course Description & Objectives:

Explore the interconnection and integration of the physical world and the cyber space. Able to Design & Develop IOT Devices.

Course Outcomes:

- Able to realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks
- Able to understand building blocks of Internet of Things and characteristics.

UNIT I - Introduction & Concepts

Introduction to Internet of Things, Physical Design of IOT, Logical Design of IOT, IOT Enabling Technologies, IOT Levels.

UNIT II - Domain Specific IOTs

Home Automation, Cities, Environment, Energy, Retail, Logistics, Agriculture, Industry, Health & Life Style.

UNIT III - M2M & System Management with NETCONF-YANG

M2M, Difference between IOT and M2M, SDN and NFV for IOT, Software defined Networking, Network Function Virtualization, Need for IOT Systems Management, Simple Network Management Protocol, Limitations of SNMP, Network Operator Requirements, NETCONF, YANG, IOT Systems management with NETCONF-YANG.

UNIT IV - Developing Internet of Things & Logical Design using Python

Introduction, IOT Design Methodology, Installing Python, Python Data Types & Data Structures, Control Flow, Functions, Modules, Packages, File Handling, Date/ Time Operations, Classes, Python Packages

UNIT IV - IOT Physical Devices & Endpoints

What is an IOT Device, Exemplary Device, Board, Linux on Raspberry Pi, Interfaces, and Programming & IOT Devices.

Text Book:

Vijay Madiseti , Arshdeep Bahga,” Internet of Things A Hands-On-Approach”,ISBN:978 0996025515,2014

Reference Books:

1. Adrian McEwen, “Designing the Internet of Things”, Wiley Publishers, first edition 2013.
2. Daniel Kellmerit, “The Silent Intelligence: The Internet of Things”, Kindle edition 2013.