Branch: BCA	Semester-VI
Subject Code: 6103	Lecture: 02 Credit: 02
Course Opted	Skill Enhancement Course - 3
Subject Title	INTERNET OF THINGS (IOT)

Course Objectives:

- To learn about IOT concepts and its Applications
- To learn various domains in IOT

Course Outcomes:

- Enable learners to understand System On Chip Architectures.
- Enable to learn ArduinoOpen Source Platform with hardware and installation.
- To develop physical interfaces and electronics of Raspberry Pi and program them using hand- on-training.

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weightage %
UNIT - I	1	**Introduction to IOT**, Features, IOT Applications, Advantages and Disadvantages, IOT Architecture & Domains, Components of IOT.	4	8
	2	IOT Devices, Technology, Protocols, Hardware and Software, Applications and its Usages	4	8
	3	IOT Testing, Analytics, IOT Ecosystem, IOT Platforms, IOT Communications: Data Link, Network Layer, Session Layer,	4	8
UNIT - II	4	**Open – Source Prototyping Platforms for IoT:** Basic Arduino Programming Extended Arduino Libraries, Arduino – Based Internet Communication, Raspberry PI, Sensors and Interfacing. **IoT Technology:** RFID + NFC, Wireless Networks + WSN, RTLS + GPS, Agents + Multi – Agent Systems, Composition Models for the Web of Things and resources on the Web, Discovery, Search, IoTMashups and Others. **Wireless Sensor Networks:** History and Context, The Node, Connecting Nodes, Networking Nodes, Secured Communication for IoT.	6	12
	5	**Data Management, Business Process and Analytics:** Data Management, Business Process in IoT, IoT Analytics, Creative Thinking Techniques, Modification, Combination Scenarios, Decentralized and Interoperable Approaches, Object – Information Distribution Architecture, Object Naming Service (ONS), Service Oriented Architecture, Network of Information, Etc.	7	14

		Application and Use Cases: Concrete Applications and Use – Cases of Web Enabled Things: Energy Management and Smart Homes, Ambient Assisted Living, Intelligent Transport, Etc. M2M, Industrial IoT Applications.		
TOTAL			**25**	**50**

Text Books:

1. The Internet of Things (MIT Press) by Samuel Greengard.
2. The Internet of Things (Connecting objects to the web) by Hakima Chaouchi ,Wiley .
3. Internet of Things (A Hands-on-Approach) by Arshdeep Bhaga and Vijay Madisetti.

Reference Books:

1. The Internet of Things Key applications and Protocols, 2nd Edition, (Wiley Publication) by Olivier Hersent, David Boswarthick and Omar Elloumi.
2. IoT –From Research and Innovation to Market development, River Publication by Ovidiu Vermesan and Peter Friess.
3. Building Internet of Things with Arduino by Charalampos Doukas.