

Branch: B.Sc.(IT)	Semester-V
Subject Code: 5102	Lecture: 02 Credit: 02
Course Opted	Core Course – 16
Subject Title	INTERNET OF THINGS

Course objectives:

- To understand general concepts of Internet of Things (IoT)
- To learn and understand the Sensing, Actuation, Networking basics, Communication Protocols
- To understand applications of Internet of Things

Course Outcomes:

After successful completion of this course, student will be able to

- Understand general concepts of Internet of Things (IoT)
- Recognize various devices, sensors and applications
- Analyze various M2M and IoT architectures (Analyze)
- Understand various IOT applications

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weightage %
UNIT-I	1	Introduction to IoT Defining IoT, Characteristics of IoT, Physical design of IoT, Logical design of IoT, Functional blocks of IoT, Communication models & APIs	5	10
UNIT-II	2	M2M to IoT – A Basic Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.	10	20
UNIT-III	3	Network & Communication aspects Wireless medium access issues, MAC protocol survey, Survey routing protocols, Sensor deployment & Node discovery, Dataaggregation & dissemination	10	20
	4	Challenges in IoT Design challenges, Development challenges, Security challenges, Other challenges	5	10
UNIT-IV	5	Internet of Things Privacy, Security and Governance: Introduction, Overview of Governance, Privacy and Security Issues, Contribution from FP7 Projects, Security, Privacy and Trust in IoT-	10	20

		Data-Platforms for Smart Cities, First Steps Towards a Secure Platform, Smartie Approach. Data Aggregation for the IoT in Smart Cities, Security		
	6	Case Studies/ Assignments: Domain specific applications of IoT Home automation, Industry applications, Surveillance applications, Other IoT applications.	10	20
TOTAL			50	100

Text Book:

1. Vijay Madiseti and Arshdeep Bahga, "Internet of Things (A Hands-on Approach)", 1st Edition, VPT, 2014

Reference Books:

1. Francis daCosta, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", 1st Edition, Apress Publications, 2013
2. Cuno Pfister, Getting Started with the Internet of Things, O'Reilly Media, 2011, ISBN: 978-1-4493-9357-1

Web References:

1. <https://www.udemy.com/internet-of-things-iot-for-beginners-getting-started/>
2. <http://playground.arduino.cc/Projects/Ideas>
3. <http://runtimeprojects.com>
4. <http://www.megunolink.com/articles/arduino-garage-door-opener>
5. <http://www.willward1.com/arduino-wifi-tutorial> Syllabus for Bachelor of Technology Computer Engineering
6. <http://www.makeuseof.com/tag/pi-overdose-heres-5-raspberry-pi-alternatives>
7. <http://www.electronicshub.org/arduino-project-ideas>
8. <http://homeautomationserver.com> i) <http://www.toptechboy.com/arduino-lessons> j) <https://www.eprolabs.com>
9. <https://www.youtube.com/watch?v=dC2GdEWHRxQ&list=PLy6JR9IR8VKOZBpDcETsH9Tb6B4bcaTXf> b) https://www.youtube.com/watch?v=kLd_JyvKV4Y c) <https://www.youtube.com/watch?v=TkA2LJctU1>