Internet of Things (ADD ON)
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[SEC]

Semester: V	Credits: 2	Subject Code: ADBC52201	Lectures: 48

Course Outcomes:
At the end of this course the learner will be able to:

- Explain technologies ,smart objects, IoT Architecture and security in Internet of things
- Illustrate the role of IoT protocols for efficient network communication
- Recognize IoT platform such as Arduino Uno
- Describe smart objects and IoT Architecture.

Unit 1: Fundamentals of IoT	03
• Basic Concepts of IoT • Major components of IoT devices • IOT Architecture • Pros & Cons of IOT	

Unit 2: Communication Technologies	05
• Wireless Communication: Bluetooth, ZigBee, WiFi, RF Links • Wired Communication: Ethernet • IOT Protocol: MQTT, CoAP, XMPP, OSGi	
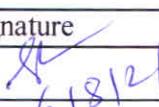
Unit 3: Microcontroller Fundamental and Arduino uno	07
• System on Chip & Microcontroller • Arduino UNO: Introduction to Arduino, Arduino UNO, Arduino Board, The Anatomy of an Arduino Board • The Development Environment of Arduino Board • Writing Arduino Software, The Arduino Sketch • Fundamentals of Arduino Programming • Trying the code on an Arduino Emulator • Arduino Libraries 25 Programming & Interfacing • Application of IoT • Case studies: Home Automation, Smart Parking, etc Server Controls	

**#12 hours for Library work, assignments, practical or field work**
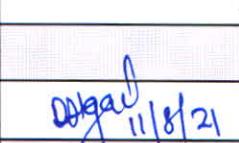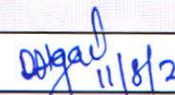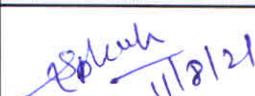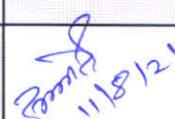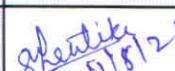
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Head of the Department	Ms Smita Borkar	

Reference Books:
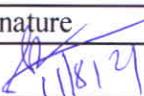
- Adrian McEwen, Hakim Cassimally , *Designing the Internet of Things*
- Schwartz, M. ,*Internet of Things with Arduino Cookbook*, Packt Publishing Ltd.
- Waher, Peter, *Learning internet of things* ,Packt Publishing Ltd, 2015
- Waltenegus Dargie,*"Fundamentals of Wireless Sensor Networks: Theory and Practice"*
- Vijay Madisetti , Arshdeep Bahga , *Internet of Things (A Hands-on-Approach)*

Websites:

- www.w3cschool.com

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Subject Expert (Outside SPPU)		*signature* 11/8/21	
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