ADVANCES IN INTERNET OF THINGS

Course Code	19CS4801B	Year	IV	Semester	II
Course Category	Program Elective-VI	Branch	CSE	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	Internet of Things
Continuous Internal Evaluation :	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes		
Upon successful completion of the course, the student will be able to:		
CO1	Understand the basic concepts of IoT - Applications, Architectures	L2
CO2	Apply data and analytics for IoT	L3
CO3	Apply IoT in the areas of Manufacturing, smart cities and transportation applications.	L3
CO4	Analyze various architectures of applications in the areas of Manufacturing, smart cities and transportation	L4

Course Content		
Unit No.	Contents	Mapped CO
I	**Introduction:** Genesis of IoT, IoT and Digitization, IoT Impact, Convergence of IT and IoT, IoT Challenges. **IoT Network Architecture and Design:** Drivers Behind New Network Architectures, Comparing IoT Architectures , A Simplified IoT Architecture, The Core IoT Functional Stack , IoT Data Management and Compute Stack	CO1
II	**Data and Analytics for IoT:** An Introduction to Data Analytics for IoT, Machine Learning, Big Data Analytics Tools and Technology, Edge Streaming Analytics	CO1,CO2
III	**IoT in Industry:**Manufacturing- An Introduction to Connected Manufacturing, An Architecture for the Connected Factory.	CO1, CO3, CO4
IV	**IoT for Smart and Connected Cities:** An IoT Strategy for Smarter Cities, Smart City IoT Architecture, **Smart City Use-Case Examples**	CO1, CO3, CO4
V	**IoT for Transportation:** Transportation Challenges, IoT Use Cases for Transportation, An IoT Architecture for Transportation.	CO1, CO3, CO4

Learning Resources
Text Books
1. IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things, David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Robert Barton, Jerome Henry, 2017, Pearson Press.
Reference Books
1. The Internet of Things: Enabling Technologies, Platforms, and Use Cases. Pethuru Raj and Anupama C. Raman, 2017, CRC Press.   2. "Internet of Things (A Hands-onApproach)", Vijay Madisetti and ArshdeepBahga, 1/e, VPT, 2014.
e-Resources and other Digital Material
1. http://www.cse.wustl.edu/~jain/cse570-15/ftp/iot_prot/index.html.