PVP 23

PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY

(Autonomous)

Kanuru, Vijayawada-520007

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (AI&ML)

III B.Tech I Semester

Internet of Things

Course Code	23AM4501C	**Year**	III	**Semester**	I
Course Category	PE	**Branch**	CSE (AI&ML)	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	Computer Networks
Continuous Internal Evaluation	30	**Semester End Evaluation**	70	**Total Marks**	100

	Course Outcomes	
Upon Successful completion of course, the student will be able to		
CO1	Describe IoT architecture, communication models, and key technologies to understand their role in building efficient and scalable solutions	**L2**
CO2	Apply standardization models, communication technologies, and web-based protocols to design affordable and scalable IoT/M2M solutions.	**L3**
CO3	Utilize IoT-based data handling and cloud integration with real-time services and sensors to enable data-driven decision-making	**L3**
CO4	Analyze the effectiveness of connectivity protocols, business integration models, and cloud-based infrastructure in building robust and data-driven IoT ecosystems.	**L4**

Contribution of course outcomes towards achievement of program outcomes & Strength of correlations (3: Substantial,2: Moderate,1: Slight)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P010**	**PO11**	**PSO1**	**PSO2**
CO1	**2**												
CO2	**3**												
CO3	**3**												
CO4		**3**									**2**		

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Syllabus		
Unit No	**Contents**	**Mapped CO**
I	**The Internet of Things**: An Overview of Internet of things, Internet of Things Technology, behind IoTs Sources of the IoTs, M2M Communication, Examples of IoTs, Design Principles for Connected Devices Internet Connectivity Principles, Internet connectivity, Application Layer Protocols: HTTP, HTTPS, FTP, Telnet	CO1
II	Business Models for Business Processes in the Internet of Things, IoT/M2M systems LAYERS AND designs standardizations, Modified OSI Stack for the IoT/M2M Systems, ETSI M2M domains and High- level capabilities, Communication Technologies, Data Enrichment and Consolidation and Device Management Gateway Ease of designing and affordability	CO1, CO2
III	Design Principles for the Web Connectivity for connected-Devices, Web Communication protocols for Connected Devices, Message Communication protocols for Connected Devices, Web Connectivity for connected-Devices.	CO1, CO2, CO4
IV	Data Acquiring, Organizing and Analytics in IoT/M2M, Applications /Services /Business Processes, IOT/M2M Data Acquiring and Storage, Business Models for Business Processes in the Internet of Things, Organizing Data, Transactions, Business Processes, Integration and Enterprise Systems.	CO1, CO3, CO4
V	Data Collection, Storage and Computing Using a Cloud Platform for IoT/M2M Applications/Services, Data Collection, Storage and Computing Using cloud platform Everything as a service and Cloud Service Models, IOT cloud-based services using the Xively (Pachube/COSM), Nimbits and other platforms Sensor, Participatory Sensing, Actuator, Radio Frequency Identification, and Wireless, Sensor Network Technology, Sensors Technology, Sensing the World.	CO1, CO3, CO4

Learning Resources
Text Books
1. Internet of Things: Architecture, Design Principles and Applications, Rajkamal, 1st Edition, 2017, McGraw Hill Higher Education. 2. Internet of Things: A Hands-On Approach, Arshdeep Bahga and Vijay Madisetti, 1st Edition, 2015, University Press.
References
1. Designing the Internet of Things, Adrian McEwen and Hakim Cassimally, 1st Edition, 2013, Wiley. **2.** Getting Started with the Internet of Things, Cuno Pfister, 1st Edition, 2011, O'Reilly Media
E-Recourses and other Digital Material
1. https://onlinecourses.nptel.ac.in/noc22_cs53/preview 2. https://onlinecourses.nptel.ac.in/noc25_cs75/preview