PVP-19

IOT ARCHITECTURE

Course Code	19EC4701E	**Year**	IV	**Semester**	I
Course Category	Program Elective IV	**Branch**	ECE	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	Nil
Continuous Internal Evaluation:	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes		BT Level
Upon successful completion of the course, the student will be able to		
CO1	**Describe** the programmer's model.	**L2**
CO2	**Choose** the appropriate protocol for communication between IoT	**L3**
CO3	**Analysis and evaluate** the data received through sensors in IOT.	**L4**
CO4	**Determine** the right sensors and communication protocols to use in a particular IoT system.	**L5**

Mapping of course outcomes with Program outcomes (CO/PO/PSO Matrix)

Note: 1- Weak correlation 2-Medium correlation 3-Strong correlation

* - Average value indicates course correlation strength with mapped PO

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3									2	2
CO2	3	3	3	3									2	2
CO3	3	3	3	3									2	2
CO4	3	3	3	3									2	2
Average* (Rounded to nearest integer)	3	3	3	3									2	2

Syllabus

Unit No.	Contents	Mapped CO
I	**Internet of Things:** An Overview, Internet of Things, IoT conceptual framework, IoT architectural view, Technology behind IoT, Sources of IoT, M2M communication, Examples of IoT.	CO1
II	**Design Principles for Connected Devices:** Introduction, IoT/M2M systems layers and designs standardisation, Communication technologies, Data enrichment, Data consolidation and device management at gateway, Ease of Designing and Affordability.	CO2
III	Web communication protocols for connected devices, Message communication protocols for connected devices, web connectivity for connected-devices network using gateway, Internet connectivity principles, IP addressing in IoT, Proxy authentication, Media Access control, Application Layer Protocols.	CO2
IV	Data acquiring and storage, Organizing the data, Analytics, Knowledge acquiring, managing and storing processes, cloud computing paradigm for data collection storage and computing, IoT cloud based services.	CO3
V	Sensor technology (Analog sensors and Digital sensors), Actuator, Sensor data communication protocols, Radio frequency identification technology, wireless sensor networks, Introduction to Arduino, Arduino IDE, Node MCU, Introduction to Raspberry Pi. IoT case study: Smart city street lights control and monitoring.	CO4

Learning Resources
Text Books
1. Raj kamal, “Internet of Things architecture and design principles “, 1ed, Mc Graw Hill.