Department of Information Technology

Course Details:

COURSE TITLE	INTERNET OF THINGS		
COURSE CODE	15IT1109	L T P C	3 0 0 3
PROGRAM	B.TECH		
SPECIALIZATION	IT		
SEMESTER	VII		
PRE REQUISITES	Electronics and Devices Circuits, Embedded systems, Computer Networks		
COURSES TO WHICH IT IS A PRE REQUISITE	Data Sciences		

Course Outcomes (COs):

1	Understand the building blocks of Internet of Things and characteristics
2	Understand the application areas of IOT
3	Realize the difference between M2M and IOT.
4	Develop Internet of Things & Logical Design using Python.
5	Explain IOT physical devices.

Course Outcome versus **Program Outcomes**

Course outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1		3	3		2			2			2		2		
CO2	2	3	2	3				2					2		
CO3	3	3	3	3	2	2					2		2		
CO4	3	3	3	2	3								2		
CO5	2		2	2	3			2					2		

S - Strongly correlated, *M - Moderately* correlated, *Blank - No correlation*

Assessment Methods	Assignment / Quiz / Mid-Test

Teaching- Learning & Evaluation

Week	Topic/ Contents	Course Outcomes	Sample questions	Teaching learning strategy	Assessment method & schedule
1	Introduction to IOT, Physical Design and Logical Design of IOT	CO1	1. What is IOT? 2. Discuss about physical design of IOT.	Lecture	Assignment-1, Test- 1 Quiz-1
2	IOT Enabling Technologies, IOT Levels and deployment templates.	CO1	1. What are IOT Enabling Technologies?	Lecture	Assignment-1, Test- 1 Quiz-1
3	Home Automation, Cities, Environment, Energy, Retail	CO2	1. What impacts will the Internet of Things (IoT) have on Energy Sector? 2. What is meant by a Smart City, in the context of Internet Of Things (IoT)?	Lecture	Assignment-1, Test- 1 Quiz-1
4	Logistics, Agriculture, Industry, Health & Lifestyle	CO2	1. What impacts will the Internet of Things (IoT) have on Health Care Sector?	Lecture	Assignment-1, Test- 1 Quiz-1
5	M2M, Difference between IOT and M2M, SDN and NFV for IOT, Need for IOT Systems Management, SNMP	CO3	1. What are the top 5 Machine-to-Machine (M2M) applications in the world? 2. What is the difference between the Internet of Things (IoT) and Machine to Machine (M2M)?	Lecture	Assignment-1, Test- 1 Quiz-1
6	Network Operator Requirements, NETCONF	CO3	1. Explain about NETCONF	Lecture	Assignment-1,2, Quiz-1, Test-1, 2
7	YANG, IOT Systems management with	CO3	1. Explain about YANG	Lecture	Assignment-2, Test- 2, Quiz-2

	NETCONF-YANG				
8	Test 1				
9	Introduction, IOT Design Methodology, Installing Python, Python Data Types & Data Structures	CO4	1. Discuss about data structures of Python. 2. What are steps to install Python?	Lecture Programming	Assignment-2, Test- 2, Quiz-2
10	Control Flow, Functions, Modules, Packages	CO4	1. Explain the control statements in python.	Lecture Programming	Assignment-2, Test- 2, Quiz-2
11	File Handling, Date / Time Operations, Classes	CO4	1. Explain File handling operations in python	Lecture Programming	Assignment-2, Test- 2, Quiz-2
12	Python Packages of interest for IOT	CO4	1. Explain the packages of IOT	Lecture Programming	Assignment-2, Test- 2, Quiz-2
13	IOT PHYSICAL DEVICES & ENDPOINTS: What is an IOT Device, Exemplary Device, Raspberry Pi	CO5	1. Discuss about IOT devices	Lecture	Assignment-2, Test- 2, Quiz-2
14	About the Board, Linux on Raspberry Pi	CO5	1. Explain about Raspberry Pi	Lecture	Assignment-2, Test- 2, Quiz-2
15	Raspberry Pi Interfaces, Programming Raspberry Pi with Python	CO5	1. What are the steps to interact with Raspberry Pi using python	Lecture Programming	Assignment-2, Test- 2, Quiz-2
16	Programming with other IOT Devices Arduino	CO5	1. What are the steps to interact with Arduino using python	Lecture Programming	Assignment-2, Test- 2, Quiz-2
17	TEST-2				