19ES1552 – INTERNET OF THINGS LABORATORY

Course Category:	Engineering Sciences		Credits:	1
Course Type:	Practical		Lecture-Tutorial-Practical:	0-0-2
Prerequisites:	Nil		Continuous Evaluation:	25
			Semester End Evaluation:	50
			Total Marks:	75

Course Outcomes

Upon successful completion of the course, the student will be able to:

CO1	**Develop** various sensor interfacing using Visual Programming Language	K6
CO2	**Analyze** various Physical Computing Techniques	K4
CO3	**Evaluate** Wireless Control of Remote Devices	K5
CO4	**Design and develop** Mobile Application which can interact with Sensors and Actuators	K6
CO5	**Develop** various sensor interfacing using Visual Programming Language	K6

Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	3	3	PO5	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	2	3	3	3	3	3	3
CO3	3	3	3	3	2	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	2	3	3	2	3	3	3	3	3	3
Avg.	3	3	3	3	2	3	3	2	3	3	3	3	3	3

1- Low	2-Medium	3-High

Course Content

Experiment No.1	Digital I/O Interface - Multicolour Led, IR Sensor, PIR, Slot Sensor.	CO1
Experiment No.2	Analog Read and Write - Potentiometer, Temperature Sensor, Led Brightness Control.	CO1
Experiment No.3	Dc Motor Control - Dc Motor Speed and Direction Control.	CO2
Experiment No.4	Read data from sensor and send it to a requesting client. (Using socket communication) Note: The client and server should be connected to same local area network.	CO2
Experiment No.5	Fabrication and direction control of wheeled robot using Arduino.	
Experiment No.6	Serial Communication - Device Control.	CO2
Experiment No.7	Wireless Module Interface - Bluetooth and Wifi.	CO3
Experiment No.8	Wireless Control of wheeled Robot using Bluetooth/Wifi.	CO3
Experiment No.9	Basic Android App Development using MIT App Inventor.	
Experiment No.10	Smart Home Android App Development using App Inventor and Arduino.	CO4

Learning Resources

Text Books & Reference Manuals	1. Sylvia Libow Martinez, Gary S Stager, "Invent To Learn: Making, Tinkering, and Engineering in the Classroom", Constructing Modern Knowledge Press, 2016.
Reference Books	2. Michael Margolis, "Arduino Cookbook", Oreilly, 2011