

Internet of Things Laboratory

Course Code	19ES1552	Year	III	Semester	I
Course Category	ES	Branch	All branches	Course Type	Lab
Credits	1	L-T-P	0-0-2	Prerequisites	Nil
Continuous Internal 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 (L6)
CO2	Analyze various Physical Computing Techniques (L4)
CO3	Evaluate Wireless Control of Remote Devices (L5)
CO4	Design and develop Mobile Application which can interact with Sensors and Actuators (L6)

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	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2
CO1	2	2	3		3	2	2		3	3		3	3	3
CO2	2	3				2	2		3	3		2	3	3
CO3	3	3				2	2		3	3		2	3	3
CO4	3	3	3	3	3	2	2		3	3		3	3	3
Average* (Rounded to nearest integer)	3	3	3	3	3	2	2		3	3		3	3	3

Syllabus		
Expt. No.	Contents	Mapped CO
I	Digital I/O Interface - Multicolour Led, IR Sensor, PIR, Slot Sensor.	CO1
II	Analog Read and Write - Potentiometer, Temperature Sensor, Led Brightness Control.	CO1
III	Dc Motor Control - Dc Motor Speed and Direction Control.	CO2
IV	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
V	Fabrication and direction control of wheeled robot using Arduino.	CO2

VI	Serial Communication - Device Control.	CO2
VII	Wireless Module Interface - Bluetooth and Wifi.	CO3
VIII	Wireless Control of wheeled Robot using Bluetooth/Wifi.	CO3
IX	Basic Android App Development using MIT App Inventor.	CO4
X	Smart Home Android App Development using App Inventor and Arduino.	CO4

Learning Resources

Text Books

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| 1. Sylvia Libow Martinez, Gary S Stager, "Invent To Learn: Making, Tinkering, and Engineering in the Classroom", Constructing Modern Knowledge Press, 2016. |
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Reference Books

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| 1. Michael Margolis, "Arduino Cookbook", Oreilly, 2011. |
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