

## INTERNET OF THINGS LAB

<b>Course Code</b>	20ES1652	<b>Year</b>	III	<b>Semester</b>	II
<b>Course Category</b>	ES	<b>Branch</b>	IT	<b>Course Type</b>	Lab
<b>Credits</b>	1.5	<b>L-T-P</b>	0-0-3	<b>Prerequisites</b>	Nil
<b>Continuous Internal Evaluation:</b>	15	<b>Semester End Evaluation:</b>	35	<b>Total Marks:</b>	50

### Course Outcomes

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

<b>CO1</b>	<b>Apply</b> appropriate techniques, resources and IDE for modeling system designs with understanding of limitations.	<b>L3</b>
<b>CO2</b>	<b>Develop</b> various sensor interfacing using Visual Programming Language	<b>L3</b>
<b>CO3</b>	<b>Evaluate</b> Wireless Control of Remote Devices	<b>L5</b>
<b>CO4</b>	<b>Design and develop</b> Mobile Application which can interact with Sensors and Actuators	<b>L6</b>
<b>CO5</b>	<b>Make</b> an effective report based on experiments.	<b>L6</b>

### Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1			3										3	3
CO2		3											3	3
CO3				1									1	1
CO4			2										2	2
CO5										3				
Average*		3	3	1						3			2	2

### Syllabus

Expt. No.	Contents	Mapped CO
1	Introduction to Arduino and necessary software installation. Interface and control LED.	CO1, CO5
2	Digital I/O Interface.	CO1, CO2, CO5
3	Analog I/O Interface.	CO1, CO2, CO5
4	Fabrication and direction control of wheeled robot using Arduino.	CO1, CO2, CO5
5	Serial Communication - Device Control.	CO1, CO2, CO5
6	Wireless Module Interface.	CO1, CO3, CO5

7	Basic Android App Development using MIT App Inventor.	CO1,CO4, CO5
8	Smart Home Android App Development using App Inventor and Arduino.	CO1,CO4, CO5

### Learning Resources

#### **Text Books**

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

#### **References**

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

#### **e-Resources & other digital material**

1. <https://nptel.ac.in/courses/108/108/108108098/>