



**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY,
EAST DELHI CAMPUS,
SURAJMAL VIHAR-110092**

Semester: 5th												
Paper code: AIDS357/AIML357								L	T/P	Credits		
Subject: Introduction to Internet of Things Lab								0	2	1		
Marking Scheme:												
1. Teachers Continuous Evaluation: As per university examination norms from time to time												
2. End term Examination: As per university examination norms from time to time												
INSTRUCTIONS TO EVALUATORS: Maximum Marks: As per university norms												
1. This is the practical component of the corresponding theory paper.												
2. The practical list shall be notified by the teacher in the first week of the class commencement under the intimation to the office of the HOD/ Institution in which they appear is being offered from the list of practicals below.												
3. Instructors can add any other additional experiments over and above the mentioned in the experiment list which they think is important.												
4. At least 8 experiments must be performed by the students.												
Course Objectives:												
1.	To teach students how to analyse different controller boards, simulation platforms and applications of IoT											
2.	To design IoT based systems and applications to solve real time problems.											
Course Outcomes:												
CO1	Apply IoT principles to design programs using a software and hardware to using variety of available resources to create IoT ecosystem											
CO2	Implement applications based on IoT for solving different problems using Arduino and Node MCU – ESP 8266											
Course Outcomes (CO) to Programme Outcomes (PO) Mapping												
(Scale 1: Low, 2: Medium, 3: High)												
CO/PO	PO01	PO02	PO03	PO04	PO05	PO06	PO07	PO08	PO09	PO10	PO11	PO12
CO1	1	1	2	2	2	-	1	1	-	-	1	1
CO2	1	1	2	2	3	1	1	1	1	1	1	1

List of Experiments:

1. Introduction to Arduino platform and programming and Introduction to various actuators & its applications.
2. Introduction with running a blinking LED and fading LED with PWM
 - A. Arduino IDE and Operators in IDE.
 - B. Frequently used Functions in Arduino IDE
3. Control Structure writing programs for if else, for and while
4. Custom functions that can be created for specific Needs.
5. Reading and writing digital and analog values. Digital and analog read/write demonstration.
6. Measuring light with Lux and a photoresistor demonstration



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7. Measuring temperature and humidity.
8. Adding an LCD screen and sketch walkthrough.
9. Create an echo server with the Ethernet Shield over Arduino.
10. Upload data from a single sensor to ThingSpeak using ESP8266 (NodeMCU),
11. Upload data from multiple sensors to ThingSpeak using ESP8266 (NodeMCU).
12. Setting up logging and visualizing data on ThingSpeak.
13. Making Project- on real-world Problems.
14. Introduction to Arduino platform and programming and Introduction to various actuators & its applications.