THIRD-YEAR DIPLOMA INFORMATION TECHNOLOGY ENGINEERINGSYLLABUS
Semester: 5TH

Course Code: 002204504 **Type of Course: PCC-LC-14**

Course Name: INTERNET OF THING -LAB

Course Prerequisites: The purpose of this course is to help the student to attain the following industry identified competency through various teaching-learning experiences.

COURSE OBJECTIVE(S):

The course focuses on significant components of the Internet of Things. The course covers the prototype and key components of networking for development of applications based on the concept of Internet of Things.

TEACHING & EXAMINATION SCHEME:

Teaching Scheme (Hrs/Week)				Examination Scheme					
Theory	Tutorial	Practical	Credit	SEE		CA			Total
				Th	Pr	MSE	PLE	LA	
0	0	2	1	00	25	00	00	25	50

Th: Theory; Pr: Practical; FA: Final Assessment; CAT: Continuous Assessment Theory; CAP: Continuous Assessment Practical;

*TOTAL Practical Hours: No. of Practical Hrs/Week*15 = 60*

LIST OF PRACTICALS: *(sample for 2 hrs/week)*15 weeks*

Sr. No.	Content	Unit No.	Time Duration
1	Study of various Sensors and actuators for IoT applications.	II	2
2	Study of Arduino Uno board technical specifications and pins	III	2
3	Develop IoT based application using Arduino board to blink the on-board LED at one second interval.	III	4
4	Develop IoT based application using Arduino board to turn ON and OFF the 3 LEDs (Red, Green, Blue) based on the 3 Pushbutton switches.	III	4
5	Develop IoT based application using Arduino board to implement automated traffic signal system using different colour LED.	III	2
6	Develop IoT based application using Arduino board to read analog input from a potentiometer and control the brightness of an LED.	III	2
7	Develop IoT based application using Arduino board from DHT sensor to measure temperature and humidity.	III	4

8	Develop IoT based application using Arduino board and ultrasonic sensor to measure distance and display it on the Serial Monitor.	**III**	2
09	Develop an IoT based application using Arduino board to control servo motors back and forth across 180 degrees.	**III**	2
10	Develop an IoT based application using an Arduino board to print "Hello IoT" on a 16x2 LCD display	**III**	4
11	Develop IoT based application using Arduino board and relay to implement smart appliance control.	**III**	2
		TOTAL	**30**

Text Book(s):

Title of the Book	Author(s)	Publication

Reference Book(s):

Title of the Book	Author(s)	Publication

Web Material Link(s):

a) https://boonsuen.com/process-scheduling-solver
b) http://cpuburst.com/ganttcharts.html
c) https://codepen.io/faso/pen/zqWGQW
d) https://www.tutorialspoint.com
e) www.w3schools.com
f) https://nptel.ac.in/courses/106106144
g) https://nptel.ac.in/courses/106105214
h) https://nptel.ac.in/courses/106102132

Equivalent/Corresponding Course on NPTEL (SWAYAM):

NPTEL course on
https://onlinecourses.swayam2.ac.in/ntr24_ed44/preview

PRACTICAL EVALUATION:

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THIRD-YEAR DIPLOMA INFORMATION TECHNOLOGY ENGINEERINGSYLLABUS

Sr. No.	Activity	Marks	Weightage
1	Semester End Examination (External Practical)	30	60%
2	Continuous Assessment Practical (CAP)	20	40%
	Semester End Examination (External Practical)		
1(a)	Lab Experiment/Exercise		30%
1(b)	Viva-voce		20%
1(c)	Certified Record		10%
	Continuous Assessment Practical (CAP)		
2(a)	Day to day Laboratory Work & Attendance		15%
2(b)	Submission of Laboratory Work/Journal		10%
2(c)	Exam		15%

* For 4 Credit Subjects

1 Credit = 25 Marks
Theory: 3 Credits = 75 Marks
Practicals: 1 Credit = 25 Marks
SEE Evaluation will be of 100 marks and converted to 50 Marks (75 Th + 25 Pr)
CA Evaluation will be of 100 Marks and converted to 50 Marks. (75 Th + 25 Pr)

Distribution of Marks for Theory Evaluation as per Bloom's Taxonomy Level:

Level	Remember	Understand	Apply	Analyse	Evaluate	Create
% Weightage	20%	20%	25%	15%	10%	10%

COURSE OUTCOMES:

CO1	Learn basic concepts of IoT.
CO2	Recognize different sensors.
CO3	Develop sketch for the IoT application using the Arduino Uno board.
CO4	Explain different IoT models.
CO5	Develop IoT applications using cloud services like thingspeak or firebase.