



## GOVERNMENT POLYTECHNIC, PURID DEPARTMENT OF ELECTRICAL ENGINEERING

Discipline: <b>ELECTRICAL ENGG.</b>	Semester: <b>5<sup>TH</sup></b>	Name of the Teaching Faculty: <b>LAXMIPRIYA KHUNTIA</b> <b>Sr. LECTURE IN ELECTRICAL ENGINEERING</b>	
Subject: <b>DE&amp;MP LAB</b>	No. of days/per week class allotted: <b>06</b>	Semester-5 <sup>th</sup> From date: <b>15-09-2022</b> To Date: <b>22.12.2022</b> No.of Weeks: <b>15</b>	
<b>PRE-REQUISITE</b>	Basic knowledge about digital number system microprocessor and programming.		
<b>COURSE OUTCOMES</b>	<b>CO1-</b> Ability to design & verify the truth tables of different logic gates and perform implementation of various gates using universal gates. <b>CO2-</b> Ability to design various types of combinational logical circuits. <b>CO3-</b> Ability to design various types of sequential logical circuits. <b>CO4-</b> Acquire skill in developing program for 1's & 2's complement, addition & subtraction of 8-bit numbers and perform comparison between two numbers using 8085 micro-processor. <b>CO5-</b> Practical understanding in microprocessor programming, interfacing of traffic light controller and generation of square wave using 8255 microcontrollers with 8085 microprocessors.		
<b>Week</b>	<b>Class Day</b>	<b>Theory/Practical Topics</b>	<b>DELIVERY METHOD</b>
1 <sup>ST</sup>	1 <sup>ST</sup>	Verify truth tables of AND, OR, NOT, NOR, NAND, XOR, XNOR gate	Whiteboard
	2 <sup>ND</sup>	Implement various gates by using universal properties of NAND & NOR gates and verify truth table.	Whiteboard
2 <sup>ND</sup>	1 <sup>ST</sup>	Implement half adder and Full adder using logic gates.	Whiteboard
	2 <sup>ND</sup>	Implement half subtractor and Full subtractor using logic gates	Whiteboard
3 <sup>RD</sup>	1 <sup>ST</sup>	Implement a 4-bit Binary to Gray code converter.	Whiteboard
	2 <sup>ND</sup>	Implement a Single bit digital comparator.	Whiteboard
4 <sup>TH</sup>	1 <sup>ST</sup>	Study Multiplexer and demultiplexer.	Whiteboard
	2 <sup>ND</sup>	Study of flip-flops. (i) S-R flip flop ( ii) J-K flip flop (iii) flip flop (iv) T flip flop	Whiteboard
5 <sup>TH</sup>	1 <sup>ST</sup>	Realize a 4-bit asynchronous UP/Down counter with a control for up/down counting.	Whiteboard
	2 <sup>ND</sup>	Realize a 4-bit synchronous UP/Down counter with a control for up/down counting..	Whiteboard
6 <sup>TH</sup>	1 <sup>ST</sup>	Implement Mode-10 asynchronous counters.	Whiteboard
	2 <sup>ND</sup>	Study shift registers.	Whiteboard
7 <sup>TH</sup>	1 <sup>ST</sup>	General Programming using 8085A development board 1. a. 1'S Complement. b. 2'S Complement.	Whiteboard
	2 <sup>ND</sup>	a. Addition of 8-bit number. b. Subtraction of 8-bit number resulting 8/16 bit number.	Whiteboard

8 <sup>TH</sup>	1 <sup>ST</sup>	a. Decimal Addition 8-bit number. b. Decimal Subtraction 8-bit number	Whiteboard
	2 <sup>ND</sup>	Compare between two numbers. b. Find the largest in an Array	Whiteboard
9 <sup>TH</sup>	1 <sup>ST</sup>	Block Transfer.	Whiteboard
	2 <sup>ND</sup>	Traffic light control using 8255.	Whiteboard
10 <sup>TH</sup>	1 <sup>ST</sup>	Generation of square wave using 8255	Whiteboard

### **LEARNING RESOURCES:**

1. Electronics Lab premier by Sacikala - (S. Chand)

*L.P. Puri*  
01/08/23

Sign. of Faculty concerned

*G.P. Puri*  
01.08.23

Principal  
G.P Puri

*L.P. Puri*  
01/08/23

Sign.of HODi/c