

LESSON PLAN

Name of the faculty: Manisha Goel
Discipline : Electrical Engg.
Semester : 6th
Subject : Programmable logic controllers and Microcontrollers
Lesson Plan Duration : 15 weeks (from January,2018 to April,2018)

Work load (Lecture/Practical) per week (55 minutes) : Lectures-04 , Practicals-04

Week	Theory		Practical	
	Lecture day	Topic	Practical day	Topic
1st	1st	What is PLC, concept of PLC	1st	Components/ subcomponents of a PLC and learning functions of different modules of a PLC system
	2nd	Building blocks of PLC		
	3rd	Functions of various blocks of PLC		
	4th	Limitations of relays, Advantages of PLCs over electromagnetic relays		
2nd	5th	Different programming languages,	2nd	Practical steps in programming a PLC using hand held programmer
	6th	PLC manufacturers and applications of PLC		
	7th	Basic operation of PLC-		
	8th	Principles of PLC		
3rd	9th	Architectural details of Processor-Part-I	3rd	Practical steps in programming a PLC using computer interfacing
	10th	Architectural details of Processor-Part-II		
	11th	Memory Structures		
	12th	Input/output structures		
4th	13th	Programming Terminals of PLC	4th	Introduction to step 5programming language, ladder diagram concepts, instruction list syntax
	14th	Power supply to PLC		
	15th	Basic instructions for latch		
	16th	Master control self holding relays		
5th	17th	Timer instructions-ON and OFF delay	5th	Basic logic operations, AND, Or, NOT functions
	18th	Retentive timers, resetting of timers		
	19th	Counter instructions like up counter, down counter, resetting of counters		
	20th	Arithmetic Instructions (ADD,SUB,DIV,MUL etc.)		
6th	21st	MOV instruction, RTC (Real Time Clock function)	6th	Logic control systems with time response as applied to clamping operation
	22nd	Comparison instructions like equal, not equal, greater, greater than equal, less than, less than equal		
	23rd	Programming on Basic instructions		
	24th	Programming on Timer instructions		
7th	25th	Programming on Counter instructions	7th	Sequence control system in lifting a device for packaging and counting
	26th	Programming on Sequencer instructions		
	27th	Programming on comparison instructions		
	28th	Revision of Ladder diagram Programming		
8th	29th	Assembly line, Packaging, Process control	8th	Use of PLC for Door Bell operation
	30th	Car parking,Doorbell operation, Traffic light control		
	31st	Microwave oven, Washing machine,Motor in forward and reverse direction		
	32nd	Star delta, DOL Starter,paint industry,filling of bottles, room Automation		
9th	33rd	Microcontroller -Overview	9th	Use of PLC for Traffic light system
	34th	Block diagram and architecture of Microcontroller		
	35th	Overview of MCS-51		
	36th	8051 -Pin details		
10th	37th	Input port structures	10th	Use of PLC for Packing process control
	38th	Output port structures		
	39th	Memory organisation		
	40th	Special function registers		
11th	41st	Revision of Microcontroller	11th	Use of PLC for Car parking system
	42nd	Instruction set of MCS-51		
	43rd	Addressing modes		
	44th	Timer operation		
12th	45th	Serial port operation and communication	12th	Familiarization with the study of architecture of 8085 kit, basic sub systems and input output connectors, function keys
	46th	Interrupts and its types		
	47th	Assemblers operations & compilers		

			Function keys
13th	48th	Assembler directives	Familiarization of Microcontroller 8051 kit
	49th	Keypad interfacing	
	50th	7-segment interface, LCD	
	51st	Stepper motor interfacing	
	52nd	A/D, D/A interfacing	
14th	53rd	RTC interfacing	Testing of general input/output on microcontroller board
	54th	Introduction of PIC Micro controllers	
	55th	Features of PIC 16C84	
15th	56th	Architecture of PIC 16C84	Development of Electrical, Instrumentation applications using 8051 microcontroller
	57th	Applications of microcontrollers	
	58th	Radio control system	
	59th	Revision of complete syllabus	
	60th	Discussion of previous year HSBTE question papers	