

Lesson plan

Name of Faculty		Mrs. Renu Bala		
Discipline		Electrical Engineering		
Semester		5th		
Subject		Programmable Logic Controllers and μ c		
Lesson Plan Duration		(From Sept2022 to Jan 2023) Theory:05, Practical :02		
Week	Theory		Practical	
	LectureDay	Topic including Assignment/ Test	Practical Day	Topic
1 st	Day 1	1 Introduction to PLC What is PLC	Day 1	Components/subcomponents of a PLC, Learning functions of different modules of a PLC system
	Day 2	Advantages Building blocks of PLC		
	Day 3	Functions of various blocks, Limitations of relays		
	Day 4	Advantages of PLCs over electromagnetic relays.		
	Day 5	Different programming languages		
2 nd	Day 1	PLC manufacturer etc.	Day 1	Practical steps in programming a PLC (a) using a Hand held programmer (b) using computer interface
	Day 2	Revision/checking		
	Day 3	Problems solutions		
	Day 4	2Introduction to working of PLC		
	Day 5	Basic operation and principles of PLC		
3 rd	Day 1	Architectural details processor	Day 1	Revision/ File checking
	Day 2	Memory structures		
	Day 3	I/O structure of plc		
	Day 4	Programming terminal		
	Day 5	Power supply for plc		
4 th	Day 1	Problems solutions	Day 1	Introduction to step 5 programming language, ladder diagram concepts, instruction list syntax
	Day 2	Revision/checking		
	Day 3	3Introduction to Instruction Set		
	Day 4	Basic instructions like latch,		
	Day 5	master control self-holding relays		
5 th	Day 1	Timer instruction like retentive timers,	Day 1	Basic logic operations, AND, OR, NOT functions
	Day 2	resetting of timers.		
	Day 3	Counter instructions like up counter		
	Day 4	down counter, resetting of counters		
	Day 5	Revision/checking		
6 th	Day 1	Arithmetic Instructions (ADD,SUB,	Day 1	Revision/ File checking
	Day 2	DIV,MUL etc.		
	Day 3	MOV instruction		

	Day 4	RTC(Real Time Clock Function)		
	Day 5	Comparison instructions like equal, not equal, greater than equal		
7 th	Day 1	Less than, less than equal	Day 1	Logic control systems with time response as applied to clamping operation
	Day 2	Revision/checking/Problems solutions		
	Day 3	4Ladder Diagram Programming		
	Day 4	Programming based on basic instructions,		
	Day 5	Timers		
8 th	Day 1	Counters	Day 1	Sequence control system e.g. in lifting a device for packaging and counting
	Day 2	Sequencer		
	Day 3	Comparison instructions using ladder program.		
	Day 4	Revision/checking		
	Day 5	Problems solutions		
9 th	Day 1	5 Applications of PLCs Assembly	Day 1	Revision/ File checking
	Day 2	Packaging, Process controls		
	Day 3	Car parking, Doorbell operation,		
	Day 4	Traffic light control		
	Day 5	Microwave Oven, Washing machine		
10 th	Day 1	Motor in forward and reverse direction	Day 1	Use of PLC for an application (teacher may decide)
	Day 2	Star-Delta, DOL Starters		
	Day 3	Paint Industry,		
	Day 4	filling of Bottles		
	Day 5	Room Automation		
11 th	Day 1	6 Introduction to SCADA	Day 1	Demonstration and study of Micro Controllers (8051) kit
	Day 2	7Micro Controller Series (MCS)-51		
	Day 3	Over View , Block diagram		
	Day 4	Pin details		
	Day 5	I/o Port structure		
12 th	Day 1	Port structure explanation	Day 1	Revision/File checking
	Day 2	Memory Organization		
	Day 3	Special function registers		
	Day 4	Revision/checking		
	Day 5	Problems solutions		
13 th	Day 1	8Instruction Set Addressing Modes	Day 1	Testing of general input/output on Micro controller board
	Day 2	Timer operation		
	Day 3	Timer modes		
	Day 4	Serial Port operation		
	Day 5	Scon		

14 th h	Day 1	& Pcon	Day 1	Controlling of LEDs using microcontroller program
	Day 2	Interrupts		
	Day 3	Types of interrupts		
	Day 4	9 Assembly language programming		
	Day 5	Data Transfer operations		
15 th h	Day 1	Input / Output operations	Day 1	Revision/File checking
	Day 2	10 Design and Interface keypad interface		
	Day 3	7- segment interface,		
	Day 4	LCD		
	Day 5	Stepper motor.		
16 th h	Day 1	RTC interface.		Internal Practical
	Day 2	11 Application of Micro controllers		
	Day 3	Revision of HSBTE old Papers		
	Day 4	Revision of HSBTE old Papers		
	Day 5	Revision of HSBTE old Papers		