Govt. Polytechnic Nanakpur (Panchkula) Haryana
Electrical Engineering Department

LESSON PLAN

Name of the faculty:	**Gulvender**
Discipline :	**Electrical Engg.**
Semester :	**4th**
Subject :	**Programmable logic controllers**
Lesson Plan Duration	**From 15 Jan 2026 to 30 April 2026**
Work load per week :	**Lectures-03, Practicals-02 hrs per group**

Week	Theory		Practical	
	Lecture day	Topic	Practic al day	Topic
1st	1	Introduction, Definition and advantage; Building	1st	Introduction to PLC building blocks and Ladder Programming.
	2	CPU, Memory organizationInput- output modules		
	3	Specialty I/O Modules, Power supply I/O module		
2nd	4	Limitations of relays, Advantages of PLCs over	2nd	Practical steps in programming a PLC using hand held programmer
	5	Different programming languages,		
	6	PLC manufacturers and applications of PLC		
3rd	7	Principles & Basic operation of PLC-	3rd	Logic operations in PLC using ladder language e.g. AND, OR, NOT etc.
	8	Architectural details of Processor-Part-I		
	9	Architectural details of Processor-Part-II		
4th	10	Memory Structures	4th	Timers and Counters instructions in PLC using ladder language.
	11	Input/output structures		
	12	Programming Terminals of PLC		
5th	13	Power supply to PLC	5th	Sequence control system e.g. in lifting a device for packaging and counting.
	14	Basic instructions for		
	15	Timer instructions-ON and OFF delay		
6th	16	Retentive timers, resetting of timers	6th	Use of PLC in any two applications (teacher may decide) Traffic Lights System
	17	Counter instructions like up counter, down		
	18	Arithmetic Instructions (ADD,SUB,DIV,MUL etc.)		
7th	19	MOV instruction, RTC (Real Time Clock function)	7th	Use of PLC in any two applications (teacher may decide) Home Automation
	20	Comparison instructions like equal, not equal,		
	21	Programming on Basic instructions		
8th	22	Programming on Timer instructions	8th	Demonstration and comparison of various 8051/8052 microcontrollers.
	23	Programming on Counter instructions		
	24	Programming on Sequencer instructions		
9th	25	Programming on comparison instructions	9th	Interfacing of 7 segment LED with 8051 using C.
	26	Revision of Ladder		
	27	Assembly line, Packaging, Process control		
10th	28	Car parking, Doorbell operation, Traffic light control	10th	Introduction to 8051 programming using C.
	29	Microwave oven, Washing machine, Motor in forward		
	30	Microcontroller -Overview		
11th	31	Block diagram and architecture of	11th	Any three application Interfacing of 4x3/4x4 Keypad with 8051 using C.
	32	Overview of MCS-51		
	33	8051 -Pin details		
12th	34	Input port structures	12th	Application circuits using 8051/8052 Car Parking with Counter
	35	Output port structures		
	36	Memory organisation		
13th	37	Special function registers	13th	Application circuits using 8051/8052 Temperature controlled Fan
	38	Addressing modes		
	39	Timer operation		
14th	40	Serial port operation and communication	14th	Application circuits using 8051/8052 RTC based digital clock
	41	Interrupts and its types		
	42	Assemblers operations & compilers		
15th	43	Assembler directives,7- segment interface, LCD	15th	Revision/File checking
	44	keypad interfacing,Stepper motor interfacing		
	45	A/D, D/A interfacing,RTC interfacing		