

Name of Faculty : Dr. Shikha Sukhija

Discipline : Electronics and Communication

Semester : 5th Sem

Subject : PLC and SCADA

Duration : 16 weeks (from August. 2026 to Dec. 2026)

Work Load (lecture/Practical per week (in hours): Lectures-03, Practical-04 Hrs per week

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC (including assignment/test)	PRACTICAL DAY	TOPIC
1st	1	Introduction	1st	Show PLC modules and components in lab/industry or through online videos.
	2.	limitations of relays and advantages of PLCs over electromagnetic relays		
	3.	PLC Operation or working	2nd	Show PLC modules and components in lab/industry or through online videos.
2nd	4.	PLC Architecture and building blocks,	3rd	Demonstration of ladder diagram programming using NO, NC and OTE instructions.
	5.	Functions of various blocks		
	6.	Different programming languages	4th	Demonstration of ladder diagram programming using NO, NC and OTE instructions.
3rd	7.	PLC applications and manufacturers	5th	Write a ladder diagram program for switching ON-OFF light.
	8.	PLC selection criteria.		
	9.	Revision unit-1	6th	Write a ladder diagram program for switching ON-OFF light.
4th	10.	Introduction, Number systems and conversions	7th	Write a ladder diagram program for liquid level control.
	11.	Binary arithmetic, Binary codes		
	12.	Boolean algebra, logic gates	8th	Write a ladder diagram program for liquid level control.

5th	13.	Basic components and their symbols	9th	Write a ladder diagram program for industry process control.
	14.	Fundamental of ladder diagrams,	10th	Write a ladder diagram program for industry process control.
	15.	Sessional -1		
6th	16.	Ladder logic functions, Boolean logic and relay logic.	11th	Write a ladder diagram program for main door control.
	17.	Introduction, Input and output data files		
	18.	status file, Bit data file	12th	Write a ladder diagram program for main door control.
7th	19.	Timer data file, Counter data file	13th	Write a ladder diagram program for vehicle parking control.
	20.	Control data file		
	21.	Integer data file and Float data file.	14th	Write a ladder diagram program for vehicle parking control.
8th	22.	Revision unit-3	15th	Write a ladder diagram program for bottling plant.
	23.	Introduction, Bit instructions		
	24.	Timer instructions	16th	Write a ladder diagram program for bottling plant.
9th	25.	Counter instructions,	17th	Write a ladder diagram program for drink dispenser.
	26.	Reset instruction		
	27.	Data handling instructions	18th	Write a ladder diagram program for drink dispenser.
10th	28.	Comparison Instructions,	19th	Write a ladder diagram program for traffic light control.
	29.	Sequencer instructions		

	30.	Sessional-2	20th	Write a ladder diagram program for traffic light control.
11th	31.	Introduction, Project and Tag creation	21st	Write a ladder diagram program for temperature control.
	32.	Visibility and text animation		
	33.	Numeric display and Numeric input	22nd	Write a ladder diagram program for temperature control.
12th	34.	Concept of String display and String input	23rd	Show online videos to demonstrate the creation and animation of graphics for various using SCADA
	35.	Concept of Label, Arrow		
	36.	Concept of vertical slider	24th	Show online videos to demonstrate the creation and animation of graphics for various using SCADA
13th	37.	Concept of horizontal slider	25th	Industrial visit to monitor the actual working of PLC and SCADA.
	38.	Concept of various animation		
	39.	Color fill, horizontal position and vertical position	26th	Industrial visit to monitor the actual working of PLC and SCADA.
14th	40.	Concept of various animation (Cont.)	27th	Revision
	41.	Concept of Alarming		
	42.	Data Logging	28th	Revision
15th	43.	Revision unit-5	29th	Revision

	44.	Revision of all syllabus	30th	Revision
	45.	Revision of all syllabus		
16th	46.	Revision of all syllabus	31st	Industry visit
	47.	Revision of all syllabus		
	48.	Sessional-3	32nd	Internal Practical