

## Lesson Plan

**Name of the Faculty :** Ravinder Kumar  
**Discipline :** ECE  
**Semester :** 6<sup>th</sup>  
**Subject :** INDUSTRIAL AUTOMATION  
**Lesson Plan Duration:** from 15 Feb. 2024 to 14 June 2024  
**Work Load (Lecture / Practical) per week (in hours):** Lectures-03

Week	Theory	
	Lecture day	Topic (including assignment / test)
1 <sup>st</sup>	1	Introduction about Subject
	2	Unit 1. Concept of PLC, Building blocks of PLC
	3	Functions of various blocks
2 <sup>nd</sup>	4	Limitations of relays. Advantages of PLCs over electromagnetic relays
	5	Different programming languages, PLC manufacturer
	6	Revision of chapter 1
3 <sup>rd</sup>	7	Unit 2 Basic operation and principles of PLC
	8	Scan Cycle Memory structures, I/O structure
	9	Programming terminal, power supply
4 <sup>th</sup>	10	Revision of chapter 2
	11	Assignment 1
	12	Revision of 1st sessional test
5 <sup>th</sup>	13	1st sessional test
	14	Unit 3. Basic instructions like latch, master control self holding relays.
	15	Timer instruction like retentive timers, resetting of timers
6 <sup>th</sup>	16	Counter instructions like up counter, down counter, resetting of counters.
	17	Arithmetic Instructions (ADD,SUB,DIV,MUL etc.) - MOV instruction
	18	RTC(Real Time Clock Function) - Watch Dog Timer
7 <sup>th</sup>	19	Comparison instructions like equal, not equal, greater, greater than equal, less than, less than equal
	20	Programming based on basic instructions, timer, counter, and comparison instructions using ladder program.
	21	Revision of chapter 3
8 <sup>th</sup>	22	Unit 4. Concept of DCS
	23	DCS I/O hardware
	24	Remote Terminal Unit
9 <sup>th</sup>	25	Assignment 2
	26	Revision of chapter 4
	27	Revision of 2nd sessional test
10 <sup>th</sup>	28	2nd sessional test
	29	Unit 5. Block Diagram of SCADA
	30	Difference between Open Architecture and Dedicated system
11 <sup>th</sup>	31	Difference between DCS and SCADA
	32	Revision chapter 5
	33	Unit 6. Introduction to electric drives
12 <sup>th</sup>	34	AC Drive for Speed and Direction control
	35	Types of AC drives
	36	Assignment 3
13 <sup>th</sup>	37	Revision of chapter 6
	38	3rd sessional test
	39	Revision of chapter 1,2
14 <sup>th</sup>	40	Revision of chapter 3,4
	41	Revision of chapter 5,6
	42	Revision of very short answer questions