

**NAME OF THE FACULTY** : HIMANSHU YADAV

**DISCIPLINE** : ECE

**SEMESTER** : 6<sup>th</sup>

**SUBJECT** : Industrial Automation

**LESSON PLAN DURATION** : 15 weeks (from 22 Mar 2021 to 2 July 2021)

**WORK LOAD (LECTURE/PRACTICAL) PER WEEK (IN HOURS):- LECTURE-04, PRACTIACL--  
PER GROUP**

WEEK	THEORY	
	Lecture / Hrs	TOPIC (Including assignment/Test/Quiz)
1 <sup>st</sup>	1	Concept of PLC
	2	Building blocks of PLC
	3	Functions of various blocks,
	4	limitations of relays
2 <sup>nd</sup>	5	Advantages of PLCs over electromagnetic relays.
	6	Different programming languages
	7	Different programming languages
	8	Different programming languages
3 <sup>rd</sup>	9	Different programming languages
	10	PLC manufacturer etc.
	11	Working of PLC
	12	Basic operation and principles of PLC
4 <sup>th</sup>	13	Basic operation and principles of PLC
	14	Scan Cycle
	15	Scan Cycle
	16	Memory structures, I/O structure
5 <sup>th</sup>	17	Memory structures, I/O structure
	18	Memory structures, I/O structure
	19	Programming terminal, power supply
	20	Programming terminal, power supply
6 <sup>th</sup>	21	<b>Assignment-1</b>
	22	<b>Sessional Test-1</b>
	23	Basic instructions like latch, master control self holding relays.
	24	Timer instruction like retentive timers, resetting of timers.

7th	25	Counter instructions like up counter, down counter, resetting of counters.
	26	Arithmetic Instructions (ADD, SUB, DIV, MUL etc.)
	27	MOV instruction
	28	RTC(Real Time Clock Function)
8th	29	Watch Dog Timer
	30	Comparison instructions like equal, not equal, greater, greater than equal, less than, less than equal
	31	Programming based on basic instructions, timer, counter, and comparison instructions using ladder program.
	32	<b>Revision</b>
9th	33	<b>Revision</b>

	34	<b>Assignment-2</b>
	35	<b>Sessional Test-2</b>
	36	Concept of DCS
10 <sup>th</sup>	37	Concept of DCS
	38	DCS I/O hardware
	39	DCS I/O hardware
	40	Remote Terminal Unit
11 <sup>th</sup>	41	Remote Terminal Unit
	42	<b>Revision</b>
	43	Block Diagram of SCADA
	44	Block Diagram of SCADA
12 <sup>th</sup>	45	Difference between Open Architecture and Dedicated System
	46	Difference between Open Architecture and Dedicated System
	47	Difference between DCS and SCADA
	48	Difference between DCS and SCADA
13 <sup>th</sup>	49	Electrical Drives: AC Drive for Speed and Direction control
	50	Electrical Drives: AC Drive for Speed and Direction control
	51	Electrical Drives: AC Drive for Speed and Direction control

	52	Electrical Drives: AC Drive for Speed and Direction control
14 <sup>th</sup>	53	<b>Revision</b>
	54	<b>Revision</b>
	55	<b>Revision</b>
	56	<b>Revision</b>
15 <sup>th</sup>	57	<b>Revision</b>
	58	<b>Revision</b>
	59	<b>Assignment- 3</b>
	60	<b>Sessional Test- 3</b>