**LESSION PLAN**

**NAME OF THE FACULTY** : - HIMANSHU YADAV

**DISCIPLINE** : - ECE

**SEMESTER** : - 5th

**SUBJECT** : - PLC

**LESSON PLAN DURATION** : - 15 weeks (from 04 AUG 2025 to 26 NOV 2025)

WORK LOAD (LECTURE/PRACTICAL) PER WEEK (IN HOURS):- LECTURE-**02**, PRACTIACL-**08**

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| **WEEK** | **THEORY** | | **PRACTICAL** | |
| **LECTURE DAY** | **TOPIC**  **(including assignment/test)** | **PRACTICAL DAY** | **TOPIC** |
| 1st | 1st | Introduction, limitations of relays and advantages of PLCs over electromagnetic relays.PLC Operation or working, | Show PLC modules and components in lab/industry or through online videos. |  |
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| 2nd | PLC Architecture and building blocks, Functions of various blocks, Different programming languages, PLC applications and manufacturers, PLC selection criteria. |  |
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| 2nd | 3 | Introduction, limitations of relays and advantages of PLCs over electromagnetic relays. | Demonstration of ladder diagram programming using NO, NC and OTE instructions. |  |
| Introduction, limitations of relays and advantages of PLCs over electromagnetic relays. |  |
| 4 | PLC Operation or working, PLC Architecture and building blocks, |  |
| Functions of various blocks, Different programming languages, PLC applications and manufacturers, PLC selection criteria. |  |
| 3rd | 5 | **Assignment-1** | Write a ladder diagram program for switching ON-OFF light. |  |
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| 6 | Introduction, Number systems and conversions, Binary arithmetic, |  |
| Binary codes, Boolean algebra |  |
| 4th | 7 | logicgates,IntroductiontoLadderlogic,Basiccomponentsandtheirsymbols, | Write a ladder diagram program for liquid level control. |  |
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| 8 | Fundamentalofladd erdiagrams,Ladder logic functions, Boolean logic and relay logic. |  |
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| 5th | 9 | **Revision** | Write a ladder diagram program for industry process control. |  |
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| 10 | **Revision** |  |
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| 6th | 11 | **Sessional Test-1** | Write a ladder diagram program for main door control. |  |
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| 12 | Introduction, Input and output data files, status file, |  |
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| 7th | 13 | Bit data file, Timer data file, Counter data file, | Write a ladder diagram program for vehicle parking control. |  |
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| 14 | Bit data file, Timer data file, Counter data file, |  |
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| 8th | 15 | Control data file, Integer data file and Float data file. | Write a ladder diagram program for bottling plant. |  |
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| 16 | Control data file, Integer data file and Float data file. |  |
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| 9th | 17 | **Revision** | Write a ladder diagram program for drink dispenser. |  |
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| 18 | Introduction, Bit instructions, Timer instructions, Counter instructions, |  |
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| 10th | 19 | Introduction, Bit instructions, Timer instructions, Counter instructions, | Write a ladder diagram program for traffic light control. |  |
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| 20 | Reset instruction, Data handling instructions, Comparison Instructions, Sequencer instructions. |  |
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| 11th | 21 | **Revision** |  |  |
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| 22 | **Assignment-2** |  |
| **Sessional Test-2** |  |
| 12th | 23 | Introduction, Project and Tag creation, Visibility and text animation, Numeric display and Numeric input, | Write a ladder diagram program for temperature control. |  |
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| 24 | Introduction, Project and Tag creation, Visibility and text animation, Numeric display and Numeric input, |  |
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| 13th | 25 | String display and String input, Concept of Label, Arrow, vertical slider, horizontal slider, | Show online videos to demonstrate the creation and animation of graphics for various |  |
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| 26 | String display and String input, Concept of Label, Arrow, vertical slider, horizontal slider, |  |
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| 14th | 27 | ,Creationofvariousanimationslikecolor,fill,horizontalposition,verticalposition,height,widthandt ouch.Alarming,DataLogging. |  |  |
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| 28 | **Revision** |  |
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| 15th | 29 | **Assignment- 3** |  |  |
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| 30 | **Sessional Test- 3** |  |
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