**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**

|  |  |  |
| --- | --- | --- |
| **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. |  |
|  |
| 2nd  | PLC Architecture and building blocks, Functions of various blocks, Different programming languages, PLC applications and manufacturers, PLC selection criteria. |  |
|  |
| 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. |  |
|  |
| 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. |  |
|  |
| 8 | Fundamentalofladd erdiagrams,Ladder logic functions, Boolean logic and relay logic. |  |
|  |
| 5th | 9 | **Revision** | Write a ladder diagram program for industry process control. |  |
|  |
| 10 | **Revision** |  |
|  |
| 6th | 11 | **Sessional Test-1** | Write a ladder diagram program for main door control. |  |
|  |
| 12 | Introduction, Input and output data files, status file,  |  |
|  |
| 7th | 13 | Bit data file, Timer data file, Counter data file, | Write a ladder diagram program for vehicle parking control. |  |
|  |
| 14  | Bit data file, Timer data file, Counter data file, |  |
|  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8th | 15  | Control data file, Integer data file and Float data file. | Write a ladder diagram program for bottling plant. |  |
|  |  |
| 16 | Control data file, Integer data file and Float data file. |  |
|  |
| 9th | 17 | **Revision** | Write a ladder diagram program for drink dispenser. |  |
|  |
| 18 | Introduction, Bit instructions, Timer instructions, Counter instructions, |  |
|  |
| 10th | 19 | Introduction, Bit instructions, Timer instructions, Counter instructions, | Write a ladder diagram program for traffic light control. |  |
|  |
| 20 | Reset instruction, Data handling instructions, Comparison Instructions, Sequencer instructions. |  |
|  |
| 11th | 21 | **Revision** |  |  |
|  |
| 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. |  |
|  |
| 24  | Introduction, Project and Tag creation, Visibility and text animation, Numeric display and Numeric input, |  |
|  |
| 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 |  |
|  |
| 26 | String display and String input, Concept of Label, Arrow, vertical slider, horizontal slider, |  |
|  |
| 14th | 27  | ,Creationofvariousanimationslikecolor,fill,horizontalposition,verticalposition,height,widthandt ouch.Alarming,DataLogging. |  |  |
|  |
| 28  | **Revision** |  |
|  |
| 15th | 29  | **Assignment- 3** |  |  |
|  |
| 30  | **Sessional Test- 3** |  |
|  |