## PLCM

## Lesson Plan

Subject: PLC&M
Total No. of chapters :9
Branch : Electrical Engineering

Semester: 6th
Lecture Planned: 61

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Lecture SN	Unit	Topic	•	
1		Relays based logic circuits	Day & Date	Remarks
2		limitations of relays based logic circuit	Tue, Feb 14, 23	
	Internal	Concept of DLC Advanced logic circuit	Wed, Feb 15, 23	
3	Introduction to	Concept of PLC, Advantages of PLCs over		
	PLC	electromagnetic relays based logic circuits  Different	Thu, Feb 16, 23	
4				
5		programming languages used in PLC	Mon, Feb 20, 23	
6	Architectural	Review of 1st Chapter	Tue, Feb 21, 23	
7		Basic operation of PLC	Wed, Feb 22, 23	
8		principle of working of PLC	Thu, Feb 23, 23	
9		Architectural details of PLC	Mon, Feb 27, 23	
		Input Modules in PLC	Tue, Feb 28, 23	
10	Detail and	Output Modules in PLC	Wed, Mar 1, 23	
11	Working of	Opto-isolation Circuit in PLC and its need	Thu, Mar 2, 23	
12	PLC	Memory structures in PLC	Mon, Mar 6, 23	
13	1 20	HMI (Human Machine Interface) used in PLC	Tue, Mar 7, 23	
14		Power supply requirements in PLC	Thu, Mar 9, 23	
15		Review of 2 <sup>nd</sup> Chapter	Mon, Mar 13, 23	
16		Review of 2 <sup>nd</sup> Chapter	Tue, Mar 14, 23	
17		Addressing in PLC	Wed, Mar 15, 23	
18		I/O Address	Sat, Mar 18, 23	
		Basic instructions: Examine ON, Examine	Out, 111d. 20, 20	
		OFF, Latch/Unlatch, Output Energize,		
19		Hold ON.	Mon, Mar 20, 23	
		Timer instructions: On delay timer, Off delay		
	Instructions	timer, retentive/non-retentive timers, resetting		
20	Set	of timers	Tue, Mar 21, 23	
21		CLASS TEST-1	Wed, Mar 22, 23	
22		Counter instructions: Up Counter, Down	Thu, Mar 23, 23	
23		Counter, resetting of Counters	Mon, Mar 27, 23	
		Comparison instructions like equal, not equal,		
		greater, greater than equal, less than,		
24		less than equal	Tue, Mar 28, 23	
25		Introduction to Ladder Logic programming,	Wed, Mar 29, 23	
	Ladday Lagia	Ladder logic programming examples based		
26		on basic instructions	Mon, Apr 3, 23	
27	Programming	timer and counter instructions.	Tue, Apr 4, 23	
28		Ladder programs	Wed, Apr 5, 23	
29	Applications of PLCs	Forward/reverse control of motor using PLC	Thu, Apr 6, 23	
30		Process Control (Stirred tank Heating Control)		
31		Car parking control	Tue, Apr 11, 23	
32		Doorbell operation	Wed, Apr 12, 23	
33		Traffic light control	Thu, Apr 13, 23	
30		Difference between Microprocessor &		
34		Microcontroller	Mon, Apr 17, 23	
35		Architectural Detail of 8051 microcontroller	Tue, Apr 18, 23	
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Saction   Sact				Wed, Apr 19, 23	
State		8051 Micro Controller			
Second Memory Organization in 8051  40  41  42  43  43  44  Assembly language programming  48  Design and linterface using 8051  Microcontroller  50  Microcontroller  Memory Organization in 8051  Med, Apr 26, 23  Intur, Apr 27, 23  Addressing Modes in 8051 Microcontroller  Mon, May 1, 23  Timer operation  Tue, May 2, 23  Wed, May 3, 23  Structure of Assembly Language  Assemblers and Compilers  Mon, May 8, 23  Assembler Directives  Tue, May 9, 23  Keypad interface  Wed, May 10, 23  Thu, May 11, 23  Stepper Motor interface  Thu, May 11, 23  Stepper Motor interface  Thu, May 11, 23  Stepper Motor interface  Thu, May 11, 23  Timer operation  Tue, May 2, 23  Mon, May 8, 23  Tue, May 9, 23  Med, May 10, 23  Tue, May 10, 23  Tue, May 10, 23  Tue, May 24, 23  Assembler Directives  Tue, May 11, 23  Stepper Motor interface  Thu, May 11, 23  Stepper Motor interface  Thu, May 11, 23  Timer operation  Tue, May 9, 23  Mon, May 10, 23  Tue, May 20, 23  Tue, May 20, 23  Applications of PIC  Fri, May 26, 23  Applications of PIC  Arduino  Application of Arduino  Tue, May 30, 23  Review of syllabus  Tue, May 30, 23  Review of syllabus  Tue, Jun 1, 23  Review of syllabus  Tue, Jun 6, 23  Review of syllabus  Thu, Jun 8, 23	37		Pin details of 8051 microcontroller		
Special Function Registers Wed, Apr 26, 23    Mathematical Processing Modes in 8051 Microcontroller	38		I/O Port Structure		
Special Function Registers   Wed, Apr 26, 23	39		Memory Organization in 8051		
Addressing Modes in 8051 Microcontroller Mon, May 1, 23  43  44  45  Assembly language programming  48  Design and Interface using 8051  Microcontroller  50  Microcontroller  51  Microcontroller  52  53  54  Introduction to PIC Microcontroller and Arduino board  Mon, May 1, 23  Addressing Modes in 8051 Microcontroller Mon, May 2, 23  Multiple Mon, May 3, 23  Multiple Mon, May 4, 23  Assembly Language Thu, May 4, 23  Assemblers and Compilers Mon, May 8, 23  Tue, May 9, 23  Mon, May 10, 23  Thu, May 11, 23  Stepper Motor interface Thu, May 11, 23  Stepper Motor interface Thu, May 18, 23  Tue, May 23, 23  PIC microcontroller Wed, May 24, 23  Applications of PIC Fri, May 26, 23  Application of Arduino Mon, May 29, 23  Application of Arduino Tue, May 30, 23  Review of syllabus Tue, Jun 1, 23  Review of syllabus Tue, Jun 6, 23  Review of syllabus Tue, Jun 6, 23  Review of syllabus Tue, Jun 6, 23  Review of syllabus Wed, Jun 7, 23  Review of syllabus Thu, Jun 8, 23	40				
Addressing Modes in 8051 Microcontroller Timer operation Tue, May 2, 23 Tue, May 3, 23 Tue, May 4, 23 Assembly language programming  Assembler Directives Tue, May 9, 23  Assembler Directives Tue, May 9, 23  Assembler Directives Tue, May 10, 23 Thu, May 11, 23 Tue, May 9, 23  Keypad interface Thu, May 11, 23 Thu, May 11, 23 Tue, May 9, 23  Keypad interface Thu, May 11, 23 Thu, May 11, 23 Thu, May 12, 23 Thu, May 10, 23 Thu, May 10, 23 Thu, May 11, 23 Thu, May 12, 23 Thu, May 10, 23 Thu, May 10, 23 Thu, May 12, 23 Thu, May 12, 23 Thu, May 12, 23 Thu, May 10, 23 Thu, May 12, 23 Thu, May 12, 23 Thu, May 11, 23 Thu, May 12, 23 Thu, May 11, 23 Thu, May 11, 23 Thu, May 11, 23 Thu, May 12, 23 Thu, May 11, 23 Thu, May 12, 23 Thu, May 12, 23 Thu, May 11, 23 Thu, May 12, 23 Thu, May	41		Instructions in 8051 Microcontroller	Thu, Apr 27, 23	
Timer operation Interrupts in 8051  Assembly Ianguage Programming  Assembler Directives  Tue, May 4, 23  Assembler Directives  Tue, May 9, 23  Tue, May 10, 23  Thu, May 10, 23  Thu, May 11, 23  Stepper Motor interface Thu, May 11, 23  Stepper Motor interface Tue, May 20, 23  Tue, May 21, 23  Tue, May 22, 23  Tue, May 23, 23  PIC microcontroller Applications of PIC Arduino Application of Arduino FIC Microcontroller Application of Arduino FIC Microcontroller Application of Arduino Tue, May 30, 23  Review of syllabus Tue, May 30, 23  Review of syllabus Thu, Jun 1, 23  Review of syllabus Thu, Jun 1, 23  Review of syllabus Tue, Jun 6, 23  Review of syllabus Thu, Jun 7, 23  Review of syllabus Thu, Jun 8, 23	42		Addressing Modes in 8051 Microcontroller	Mon, May 1, 23	
Assembly language programming  48 Design and Interface using 8051 Microcontroller Stepper Motor interface Tue, May 10, 23 Stepper Motor interface Tue, May 11, 23 Stepper Motor interface Tue, May 23, 23 Mon, May 11, 23 Stepper Motor interface Tue, May 11, 23 Stepper Motor interface Tue, May 12, 23 Tue, May 23, 23 Mon, May 24, 23 Mon, May 24, 23 Mon, May 24, 23 Mon, May 29, 23 Mon,	43			Tue, May 2, 23	
Assembly language programming  47 Programming  48 Design and Interface using 8051  Microcontroller  50 Microcontroller  51 Introduction to PIC Microcontroller and Arduino board  58 Seppensor Assembly Language Assembly Language Assembler Directives  Structure of Assembly Language Mon, May 4, 23  Mon, May 8, 23  Mon, May 9, 23  Mon, May 9, 23  Med, May 10, 23  Thu, May 11, 23  Stepper Motor interface Thu, May 18, 23  Review Tue, May 23, 23  PIC microcontroller Wed, May 24, 23  Applications of PIC Fri, May 26, 23  Arduino Mon, May 29, 23  Application of Arduino Tue, May 30, 23  Review of syllabus Thu, Jun 1, 23  Review of syllabus Thu, Jun 1, 23  Review of syllabus Tue, Jun 6, 23  Review of syllabus Tue, Jun 6, 23  Review of syllabus Thu, Jun 8, 23	44		Interrupts in 8051	Wed, May 3, 23	
Assemblers and Compilers  Mon, May 8, 23  Assembler Directives  Tue, May 9, 23  Tue, May 10, 23  Tue, May 11, 23  Tue, May 23, 23  Tue, May 24, 23  Tue, May 24, 23  Tue, May 26, 23  Tue, May 27, 23  Tue, May 28, 23  Tue, May 28, 23  Tue, May 11, 23  Tue, May 28, 23  Tue, May 28, 23  Tue, May 28, 23  Tue, May 29, 23  Tue, May 29, 23  Applications of PIC  Arduino  Application of Arduino  PIC  Microcontroller and Arduino  Board  Tue, May 30, 23  Tue, May 30, 23  Tue, May 30, 23  Tue, May 26, 23  Application of Arduino  Review of syllabus  Tue, May 30, 23  Tue, May 30, 23  Tue, May 26, 23  Application of Arduino  Review of syllabus  Tue, May 30, 23  Tue, Jun 6, 23  Review of syllabus  Tue, Jun 6, 23  Tue, Jun 6, 23  Tue, Jun 6, 23  Tue, Jun 8, 23	45	Assembly	the second secon	Thu, May 4, 23	
Assembler Directives  Tue, May 9, 23  Assembler Directives  Tue, May 9, 23  Tue, May 9, 23  Tue, May 9, 23  Tue, May 9, 23  Thu, May 10, 23  Thu, May 11, 23  Stepper Motor interface  Review  Tue, May 11, 23  Thu, May 18, 23  Thu, May 18, 23  Thu, May 18, 23  Thu, May 18, 23  Thu, May 24, 23  PIC microcontroller  Applications of PIC  Arduino  Mon, May 29, 23  Application of Arduino  PIC  Microcontroller  and Arduino  board  Tue, May 30, 23  Review of syllabus  Thu, Jun 1, 23  Review of syllabus  Thu, Jun 1, 23  Review of syllabus  Tue, Jun 6, 23  Review of syllabus  Thu, Jun 7, 23  Review of syllabus  Thu, Jun 8, 23	46			Mon, May 8, 23	
Interface using 8051   Stepper Motor interface   Thu, May 11, 23   Stepper Motor interface   Thu, May 18, 23   Thu, May 18, 23   Thu, May 23, 23   Thu, May 23, 23   Thu, May 24, 23   Thu, May 18, 24   Thu, May 18, 24   Thu, May 18, 24   Thu, May 18, 24   Thu, Ma	47	programming	The second secon	Tue, May 9, 23	
Stepper Motor interface  Thu, May 18, 23  Review  Tue, May 24, 23  Applications of PIC  Arduino  Introduction to PIC  Microcontroller and Arduino board  Fig. Microcontroller and Arduino board  Morrocontroller and Arduino board  Stepper Motor interface  Review  Review  Tue, May 24, 23  Applications of PIC  Fri, May 26, 23  Arduino  Mon, May 29, 23  Review of syllabus  Wed, May 31, 23  Review of syllabus  Thu, Jun 1, 23  Review of syllabus  Tue, Jun 6, 23  Review of syllabus  Thu, Jun 7, 23  Review of syllabus  Thu, Jun 8, 23	48	Interface using 8051	Keypad interface	Wed, May 10, 23	
Stepper Motor interface  Thu, May 18, 23  Review  Tue, May 24, 23  Applications of PIC  Arduino  Introduction to PIC  Microcontroller and Arduino board  Fig. Microcontroller and Arduino board  Morrocontroller and Arduino board  Stepper Motor interface  Review  Review  Tue, May 24, 23  Applications of PIC  Fri, May 26, 23  Arduino  Mon, May 29, 23  Review of syllabus  Wed, May 31, 23  Review of syllabus  Thu, Jun 1, 23  Review of syllabus  Tue, Jun 6, 23  Review of syllabus  Thu, Jun 7, 23  Review of syllabus  Thu, Jun 8, 23	49		7- Segment interface	Thu, May 11, 23	
51 52 53 54 55 Introduction to PIC Microcontroller and Arduino board 58 59 60 61 PIC mecrocontroller Wed, May 24, 23 Applications of PIC Fri, May 26, 23 Arduino Mon, May 29, 23 Arduino Tue, May 30, 23 Review of syllabus Wed, May 31, 23 Review of syllabus Thu, Jun 1, 23 Review of syllabus Tue, Jun 6, 23 Review of syllabus Wed, Jun 7, 23 Review of syllabus Thu, Jun 8, 23	50		Stenner Motor interface	Thu, May 18, 23	
53 54 55 Introduction to PIC Microcontroller and Arduino board 59 60 61 Applications of PIC Arduino Application of Arduino PIC Microcontroller and Arduino board Application of Arduino PIC Microcontroller and Arduino board Review of syllabus	51		Review	Tue, May 23, 23	
54 55 Introduction to PIC Microcontroller and Arduino board  58 59 60 61 Arduino Mon, May 29, 23 Application of Arduino Tue, May 30, 23 Review of syllabus Wed, May 31, 23 Thu, Jun 1, 23 Review of syllabus Mon, Jun 5, 23 Review of syllabus Tue, Jun 6, 23 Review of syllabus Wed, Jun 7, 23 Review of syllabus Thu, Jun 8, 23	52	Introduction to PIC Microcontroller and Arduino	PIC microcontroller	Wed, May 24, 23	
Introduction to PIC Microcontroller and Arduino board Review of syllabus Review of syllabus Mon, Jun 1, 23 Review of syllabus Mon, Jun 5, 23 Review of syllabus Tue, Jun 6, 23 Review of syllabus Review of syllabus Tue, Jun 6, 23 Review of syllabus Review of syllabus Thu, Jun 7, 23 Review of syllabus Thu, Jun 8, 23	53		Applications of PIC	Fri, May 26, 23	
FIC Microcontroller and Arduino board Review of syllabus Review of syllabus Mon, Jun 1, 23 Review of syllabus Mon, Jun 5, 23 Review of syllabus Tue, Jun 6, 23 Review of syllabus Wed, Jun 7, 23 Review of syllabus Thu, Jun 8, 23	54		Arduino	Mon, May 29, 23	
Microcontroller and Arduino board  Microcontroller and Arduino board  Review of syllabus	55		Application of Arduino	Tue, May 30, 23	
and Arduino board  8eview of syllabus Review of syllabus Tue, Jun 6, 23 Review of syllabus Thu, Jun 8, 23	56		Review of syllabus	Wed, May 31, 23	
58 board Review of syllabus Mon, Jun 5, 23 Review of syllabus Tue, Jun 6, 23 Review of syllabus Wed, Jun 7, 23 Review of syllabus Thu, Jun 8, 23	57		Review of syllabus	Thu, Jun 1, 23	
Feview of syllabus  Review of syllabus  Review of syllabus  Review of syllabus  Tue, Jun 6, 23  Wed, Jun 7, 23  Thu, Jun 8, 23	58		Review of syllabus	Mon, Jun 5, 23	
Review of syllabus Thu, Jun 8, 23	59		Review of syllabus	Tue, Jun 6, 23	
	60		Review of syllabus	Wed, Jun 7, 23	
	61		Review of syllabus		

Subject Teacher: