## ACADEMIC LESSON PLAN OF WINTER 2022

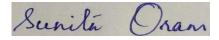
Discipline:	Semester:5 <sup>TH</sup> Sem	Name of the Teaching Faculty: Smt. Sunita Oram
ELECTRICAL	(SEC-A(G-1))	
Subject: POWER	No. of days/per	Semester From: 15 <sup>TH</sup> SEP 2022 to 22 <sup>ND</sup> DEC 2022
ELECTRONICS	week class	No. of Western 15 mester
& PLC LAB	allotted:	No. of Weeks: 15 weeks
	1p(3hr)/week	
1 <sup>st</sup>	1 <sup>st</sup>	(I) Power Electronics
and	1 St	1. Study of switching characteristics of a power transistor
$2^{nd}$	1 <sup>st</sup>	2. Study of V-I characteristics of SCR
3 <sup>rd</sup>	1 <sup>st</sup>	3. Study of V-I characteristics of TRIAC
$4^{\text{th}}$	1 <sup>st</sup>	4. Study of V-I characteristics of DIAC
5 <sup>th</sup>	1 <sup>st</sup>	5. Study of drive circuit for SCR & TRIAC using DIAC
6 <sup>th</sup>	1 <sup>st</sup>	6. Study of drive circuit for SCR & TRIAC using UJT.
$7^{\mathrm{th}}$	1st	7. To study phase controlled bridge rectifier using resistive load
8 <sup>th</sup>	1 <sup>st</sup>	8. To study series Inverter.
9 <sup>th</sup>	1 <sup>st</sup>	9. Study of voltage source Inverter.
10 <sup>th</sup>	1 <sup>st</sup>	10. To perform the speed control of DC motor using Chopper
11 <sup>th</sup>	1 <sup>st</sup>	11. To study single-phase Cyclo-converter.
	1 <sup>st</sup>	(II) PLC Programming
		1. Introduction/Familiarization PLC Trainer & its Installation with PC
$12^{\text{th}}$		(a) Learn the basics and hardware components of PLC
		(b) Understand configuration of PLC system
		(c) Study various building blocks of PLC
		(d) Determine the No. of digital I/O & Analog I/O
	1 <sup>st</sup>	2. Execute the different Ladder Diagrams
1 oth		(a) Demonstrate PLC and Ladder diagram-Preparation downloading and
13 <sup>th</sup>		running
		(b) Execute Ladder diagrams for different Logical Gates
		(c) Execute Ladder diagrams using timers & counters
$14^{\text{th}}$	1 <sup>st</sup>	3. Execute the Ladder Diagrams with model applications
		(i) DOL starter (ii)Star- Delta starter
$15^{\text{th}}$	$1^{st}$	4. Execute Ladder diagrams with model applications (i) Stair case lighting
		(ii)
		Traffic light controller

Sunita Oran

Signature of Teaching Faculty

## ACADEMIC LESSON PLAN OF WINTER 2022

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Discipline: ELECTRICAL	Semester:5 <sup>TH</sup> Sem (SEC-A(G2))	Name of the Teaching Faculty: Smt. Sunita Oram
Subject: POWER ELECTRONICS & PLC LAB	No. of days/per week class allotted:	Semester From: 15 <sup>TH</sup> SEP 2022 to 22 <sup>ND</sup> DEC 2022 No. of Weeks: 15 weeks
	1p(3hr)/week	
1 <sup>st</sup>	1 <sup>st</sup>	(I) Power Electronics 1. Study of switching characteristics of a power transistor
2 <sup>nd</sup>	1 <sup>st</sup>	2. Study of V-I characteristics of SCR
3 <sup>rd</sup>	1 <sup>st</sup>	3. Study of V-I characteristics of TRIAC
4 <sup>th</sup>	1 <sup>st</sup>	4. Study of V-I characteristics of DIAC
5 <sup>th</sup>	1 <sup>st</sup>	5. Study of drive circuit for SCR & TRIAC using DIAC
6 <sup>th</sup>	1 <sup>st</sup>	6. Study of drive circuit for SCR & TRIAC using UJT.
7 <sup>th</sup>	1st	7. To study phase controlled bridge rectifier using resistive load
8 <sup>th</sup>	1 <sup>st</sup>	8. To study series Inverter.
9 <sup>th</sup>	1 <sup>st</sup>	9. Study of voltage source Inverter.
10 <sup>th</sup>	1 <sup>st</sup>	10. To perform the speed control of DC motor using Chopper
11 <sup>th</sup>	1 <sup>st</sup>	11. To study single-phase Cyclo-converter.
12 <sup>th</sup>	1 <sup>st</sup>	<ul> <li>(II) PLC Programming</li> <li>1. Introduction/Familiarization PLC Trainer &amp; its Installation with PC</li> <li>(a) Learn the basics and hardware components of PLC</li> <li>(b) Understand configuration of PLC system</li> </ul>
		<ul><li>(c) Study various building blocks of PLC</li><li>(d) Determine the No. of digital I/O &amp; Analog I/O</li></ul>
13 <sup>th</sup>	1 <sup>st</sup>	<ul> <li>2. Execute the different Ladder Diagrams</li> <li>(a) Demonstrate PLC and Ladder diagram-Preparation downloading and running</li> <li>(b) Execute Ladder diagrams for different Logical Gates</li> </ul>
14 <sup>th</sup>	1 <sup>st</sup>	<ul><li>(c) Execute Ladder diagrams using timers &amp; counters</li><li>3. Execute the Ladder Diagrams with model applications</li></ul>
15 <sup>th</sup>	1 <sup>st</sup>	<ul><li>(i) DOL starter (ii)Star- Delta starter</li><li>4. Execute Ladder diagrams with model applications (i) Stair case lighting</li></ul>
15	1	(ii) Traffic light controller



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## **ACADEMIC LESSON PLAN OF WINTER 2022**

Discipline: ELECTRICAL	Semester:5 <sup>TH</sup> Sem (SEC-B)	Name of the Teaching Faculty: Smt. Sunita Oram
Subject: POWER ELECTRONICS & PLC LAB	No. of days/per week class allotted: 1p(3hr)/week	Semester From: 15 <sup>TH</sup> SEP 2022 to 22 <sup>ND</sup> DEC 2022 No. of Weeks: 15 weeks
1 <sup>st</sup>	1 <sup>st</sup>	(I) Power Electronics 1. Study of switching characteristics of a power transistor
2 <sup>nd</sup>	1 <sup>st</sup>	2. Study of V-I characteristics of SCR
3 <sup>rd</sup>	1 <sup>st</sup>	3. Study of V-I characteristics of TRIAC
4 <sup>th</sup>	1 <sup>st</sup>	4. Study of V-I characteristics of DIAC
5 <sup>th</sup>	1 <sup>st</sup>	5. Study of drive circuit for SCR & TRIAC using DIAC
6 <sup>th</sup>	1 <sup>st</sup>	6. Study of drive circuit for SCR & TRIAC using UJT.
7 <sup>th</sup>	1st	7. To study phase controlled bridge rectifier using resistive load
8 <sup>th</sup>	1 <sup>st</sup>	8. To study series Inverter.
9 <sup>th</sup>	1 <sup>st</sup>	9. Study of voltage source Inverter.
10 <sup>th</sup>	1 <sup>st</sup>	10. To perform the speed control of DC motor using Chopper
11 <sup>th</sup>	1 <sup>st</sup>	11. To study single-phase Cyclo-converter.
12 <sup>th</sup>	1 <sup>st</sup>	<ul> <li>(II) PLC Programming</li> <li>1. Introduction/Familiarization PLC Trainer &amp; its Installation with PC</li> <li>(a) Learn the basics and hardware components of PLC</li> <li>(b) Understand configuration of PLC system</li> <li>(c) Study various building blocks of PLC</li> <li>(d) Determine the No. of digital I/O &amp; Analog I/O</li> </ul>
13 <sup>th</sup>	1 <sup>st</sup>	<ul> <li>2. Execute the different Ladder Diagrams</li> <li>(a) Demonstrate PLC and Ladder diagram-Preparation downloading and running</li> <li>(b) Execute Ladder diagrams for different Logical Gates</li> <li>(c) Execute Ladder diagrams using timers &amp; counters</li> </ul>
14 <sup>th</sup>	1 <sup>st</sup>	<ul><li>3. Execute the Ladder Diagrams with model applications</li><li>(i) DOL starter (ii)Star- Delta starter</li></ul>
15 <sup>th</sup>	1 <sup>st</sup>	<ul> <li>4. Execute Ladder diagrams with model applications (i) Stair case lighting</li> <li>(ii)</li> <li>Traffic light controller</li> </ul>

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