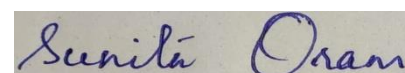


## ACADEMIC LESSON PLAN OF WINTER 2022

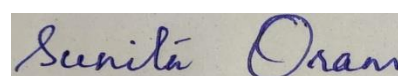
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|---|--|---|
| Discipline:<br><b>ELECTRICAL</b>                | Semester: 5 <sup>TH</sup> Sem<br>(SEC-A(G-1))        | Name of the Teaching Faculty: <b>Smt. Sunita Oram</b>   |
| Subject: <b>POWER ELECTRONICS &amp; PLC LAB</b> | No. of days/per week class allotted:<br>1p(3hr)/week | Semester From: 15 <sup>TH</sup> SEP 2022 to 22 <sup>ND</sup> DEC 2022<br>No. of Weeks: 15 weeks   |
| 1 <sup>st</sup>                                 | 1 <sup>st</sup>                                      | <b>(I) Power Electronics</b><br>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>                                 | 1 <sup>st</sup>                                      | 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>                                      | <b>(II) PLC Programming</b><br>1. Introduction/Familiarization PLC Trainer & its Installation with PC<br>(a) Learn the basics and hardware components of PLC<br>(b) Understand configuration of PLC system<br>(c) Study various building blocks of PLC<br>(d) Determine the No. of digital I/O & Analog I/O |
| 13 <sup>th</sup>                                | 1 <sup>st</sup>                                      | 2. Execute the different Ladder Diagrams<br>(a) Demonstrate PLC and Ladder diagram-Preparation downloading and running<br>(b) Execute Ladder diagrams for different Logical Gates<br>(c) Execute Ladder diagrams using timers & counters  |
| 14 <sup>th</sup>                                | 1 <sup>st</sup>                                      | 3. Execute the Ladder Diagrams with model applications<br>(i) DOL starter (ii) Star- Delta starter  |
| 15 <sup>th</sup>                                | 1 <sup>st</sup>                                      | 4. Execute Ladder diagrams with model applications (i) Stair case lighting<br>(ii) Traffic light controller   |



Signature of Teaching Faculty

### ACADEMIC LESSON PLAN OF WINTER 2022

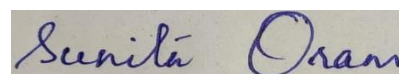
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|---|--|---|
| Discipline:<br><b>ELECTRICAL</b>                | Semester: 5 <sup>TH</sup> Sem<br>(SEC-A(G2))         | Name of the Teaching Faculty: <b>Smt. Sunita Oram</b>   |
| Subject: <b>POWER ELECTRONICS &amp; PLC LAB</b> | No. of days/per week class allotted:<br>1p(3hr)/week | Semester From: 15 <sup>TH</sup> SEP 2022 to 22 <sup>ND</sup> DEC 2022<br>No. of Weeks: 15 weeks   |
| 1 <sup>st</sup>                                 | 1 <sup>st</sup>                                      | <b>(I) Power Electronics</b><br>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  |
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| 7 <sup>th</sup>                                 | 1 <sup>st</sup>                                      | 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.  |
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| 13 <sup>th</sup>                                | 1 <sup>st</sup>                                      | 2. Execute the different Ladder Diagrams<br>(a) Demonstrate PLC and Ladder diagram-Preparation downloading and running<br>(b) Execute Ladder diagrams for different Logical Gates<br>(c) Execute Ladder diagrams using timers & counters  |
| 14 <sup>th</sup>                                | 1 <sup>st</sup>                                      | 3. Execute the Ladder Diagrams with model applications<br>(i) DOL starter (ii) Star- Delta starter  |
| 15 <sup>th</sup>                                | 1 <sup>st</sup>                                      | 4. Execute Ladder diagrams with model applications (i) Stair case lighting<br>(ii) Traffic light controller   |



Signature of Teaching Faculty

**ACADEMIC LESSON PLAN OF WINTER 2022**

|   |  |   |
|---|--|---|
| Discipline:<br><b>ELECTRICAL</b>                | Semester:5 <sup>TH</sup> Sem<br>(SEC-B)              | Name of the Teaching Faculty: <b>Smt. Sunita Oram</b>   |
| Subject: <b>POWER ELECTRONICS &amp; PLC LAB</b> | No. of days/per week class allotted:<br>1p(3hr)/week | Semester From: 15 <sup>TH</sup> SEP 2022 to 22 <sup>ND</sup> DEC 2022<br><br>No. of Weeks: 15 weeks   |
| 1 <sup>st</sup>                                 | 1 <sup>st</sup>                                      | <b>(I) Power Electronics</b><br>1. Study of switching characteristics of a power transistor   |
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| 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.  |
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Signature of Teaching Faculty