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|  | **Lesson Plan** |
| Name of Faculty | : SUNIL KUMAR |
| Discipline | : ELECTRICAL ENGG. |
| Semester | : 4th |

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| Subject |  : PLC & MICROCONTROLLERS |

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| Lesson Plan Duration |  : 18 Weeks ( From 15-02-2024 to 14-06-2024) |
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|  |  | **Theory** |
| **Week** | **Lecture** | **Topic** |
|  | **Day** | **(including assignment/test )** |
| **1st** | 1 | **UNIT – I : - Fundamentals of PLC**Introduction, Definition and advantage |
| 2 | Building blocks of PLC |
| 3 | CPU, Memory organization |
| **2nd** | 4 | Input- output modules  |
| 5 | Discrete and Analog |
| 6 |  Continuous Previous Topic |
| **3rd** | 7 | Specialty I/O Modules |
| 8 | Power supply |
| 9 | I/O module selection criteria |
| **4th** | 10 | Continuing Previous Topic |
| 11 | Revision & Doubts |
| 12 | Interfacing different I/O devices with appropriate I/O modules |
| **5th** | 13 | Continuing Previous Topic |
| 14 | **Revision Unit - I** |
| 15 | Notebook Check and Doubts |
| **6th** | 16 | Assignment |
| 17 | Class Test |
| 18 | **UNIT – II : - PLC Instructions and Programming**PLC programming Instructions |
| **7th** | 19 | Relay type instructions, Timer instructions: On delay, off delay, retentive |
| 20 | Counter instructions: Up, Down, High speed, Logical instructions |
| 21 | Comparison Instructions |
| **8th** | 22 | Data handling Instructions, Arithmetic instructions |
| 23 | Simple Programming examples using ladder logic |
| 24 | Language based on relay, timer counter |
| **9th** | 25 | Logical, comparison, arithmetic and data handling instructions. |
| 26 | **Revision Unit - II** |
| 27 | Notebook Check and Doubts |
| **10th** | 28 | **UNIT – III : - Applications of PLC**PLC Based Applications, Motor sequence control |
| 29 | Motor in forward and reverse direction |
| 30 | Star-Delta, DOL Starters |
| **11th** | 31 | Traffic light control, Elevator control |
| 32 | Conveyor system, Stepper motor control, packaging etc |
| 33 | **Revision Unit - III** |
| **12th** | 34 | Notebook Check and Doubts |
| 35 | Class Test |
| 36 | **UNIT – IV : - Architecture of Microcontroller 8051** Difference between micro processor and micro controller |
| **13th** | 37 | Block diagram of 8051, function of each block |
| 38 | Pin diagram, function of each pin, |
| 39 | Concept of Internal memory and External memory (RAM and ROM) |
| **14th** | 40 | Internal RAM structure, |
| 41 | Reset and clock circuit |
| 42 | Various registers and SFRs of 8051 |
| **15th** | 43 | **Revision Unit - IV** |
| 44 | Notebook Check and Doubts |
| 45 | **UNIT – V : - Microcontroller Instruction and Programming** Instruction set and addressing modes:  |
| **16th** | 46 | Timer operation, |
| 47 | Serial Port operation, |
| 48 | interrupts: Data Transfer operations |
| **17th** | 49 | Input/output operations. |
| 50 | Design and Interface: keypad interface, |
| 51 | 7- segment interface, |
| **18th** | 52 | LCD, stepper motor; applications. |
| 53 | Revision : UNIT - V |
| 54 | Revision Previous Year Question Paper |