**NAME OF THE FACULTY** : Manju

**DISCIPLINE** : ECE

**SEMESTER** : 4 th

**SUBJECT** : MICROPROCESSOR AND MICRO-CONTROLLERS

**LESSON PLAN DURATION** : - 15 weeks (February-June2024)

WORK LOAD (LECTURE/PRACTICAL) PER WEEK (IN HOURS):- LECTURE-**03**, PRACTIACL-**04** PER GROUP

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| **WEEK S.N.** | **THEORY** | | **PRACTIAL** | | |
| **Lecture**  **/ Hrs** | **TOPIC**  **(Including Assignment/Test)** | **Practial**  **/ Hrs** | | **Experiment** |
| 1st | 1 | **UNIT I:** Introduction to Microprocessors and Microcontrollers  Basic Introduction | Group-1 | 1 | Introduction about the course laboratory and its syllabus. |
| 2 | comparison of Microcomputer, Microprocessor, and  Microcontroller, Selection of Microcontroller | 2 |
| Group-2 | 1 | Introduction about the course laboratory and its syllabus. |
| 3 | Introduction to 8051-History, Architecture | 2 |
| 2nd | 1 | Architecture & Pin Diagram | Group-1 | 1 | 1. Understand 8051 development board |
| 2 | Crystal Circuit, Reseat Circuit | 2 |
| Group-2 | 1 | 1. Understand 8051 development board |
| 3 | **UNIT II**: Programming Languages and Instruction Set  Different Types of Programming languages for 8051 | 2 |
| 3rd | 1 | Advantages of Programming in C | Group-  1 | 1 | 2.Generating Hex File using Keil Compiler |
| 2 | Addressing Modes | 2 |
| Group-2 | 1 | 2.Generating Hex File using Keil Compiler |
| 3 | Instruction Set of 8051 | 2 |
| 4th | 1 | Instruction Set of 8051 | Group  -1 | 1 | 3. Programming and interfacing of RELAY and Buzzer |
| 2 |
| 2 | Types of Instructions |  |
| Group-2 | 1 | 3. Programming and interfacing of RELAY and Buzzer |
| 3 | Data types and time delay in 8051 | 2 |
| 5th | 1 | I/O programming in 8051 C | Group-1 | 1 | 4. Programming to interface switches and LEDs |
| 2 | Hex file generation using Keil Compiler | 2 |
| Group-2 | 1 | 4. Programming to interface switches and LEDs |
| 3 | **Assignment-1/Quiz** | 2 |

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| **WEEK S.N.** | **THEORY** | | **PRACTICAL** | | |
| **Lecture**  **/ Hrs** | **TOPIC**  **(Including Assignment/Test)** | **Practical**  **/ Hrs** | | **Experiment** |
| 6th |  | **Sessional Test-1** | Group-1 | 1 | Practice and Revision |
| 1 | **UNIT III**: 8051 Timers  Timers and Registers of 8051 | 2 |
| Group-2 | 1 | Practice and Revision |
| 2 | Timer / Counter logic and modes |
| 3 | Programming of 8051 timers | 2 |
| 7th | 1 | Programming of 8051 timers cont. | Group-1 | 1 | 5. Programming and interfacing of LCD |
| 2 | Programming Timer 1 using C | 2 |
| Group-2 | 1 | 5. Programming and interfacing of LCD |
| 3 | Programming Timer 1 using C cont. | 2 |
| 8th | 1 | **UNIT IV**: Serial Port Communication  Serial Port of 8051 | Group-  1 | 1 | Practice and Revision |
| 2 | Basics of serial communication | 2 |
| Group-2 | 1 | Practice and Revision |
| 3 | Serial Communication-SCON | 2 |
| 9th | 1 | Serial Communication-SBUF | Group-1 | 1 | 6. Programming for A/D converter, result on LCD. |
| 2 | Modes of serial communication | 2 |
| Group-2 | 1 | 6. Programming for A/D converter, result on LCD. |
| 3 | 8051 connection to RS232 | 2 |
| 10th | 1 | Interrupts | Group-  1 | 1 | 7. Programming for D/A converter, result on LCD |
| 2 | Interrupts cont. | 2 |
| Group-2 | 1 | 7. Programming for D/A converter, result on LCD |
| 3 | **Assignment-2/Quiz** | 2 |
| 11th | 1 | **Sessional Test-2** | Group-  1 | 1 | Practice and Revision |
| 2 | **UNIT V**:Real World Interfacing with 8051  I/O Interfacing | 2 |
| Group-2 | 1 | Practice and Revision |
| 3 | LED Interfacing | 2 |

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| **WEEK S.N.** | **THEORY** | | **PRACTICAL** | | |
| **Lecture**  **/ Hrs** | **TOPIC**  **(Including Assignment/Test)** | **Practical**  **/ Hrs** | | **Experiment** |
| 12th | 1 | LCD Interfacing | Group-1 | 1 | 8. Interfacing Stepper Motor with 8051. |
| 2 | Keyboard Interfacing | 2 |
| Group-2 | 1 | 8. Interfacing Stepper Motor with 8051. |
| 3 | Interfacing ADC | 2 |
| 13th | 1 | Interfacing DAC | Group-1 | 1 | 9. Interfacing different sensors with 8051. |
| 2 | Sensor Interfacing | 2 |
| Group-2 | 1 | 9. Interfacing different sensors with 8051. |
| 3 | Signal Conditioning | 2 |
| 14th | 1 | Revision | Group-1 | 1 | Practice and Revision |
| 2 | Revision | 2 |
| Group-2 | 1 | Practice and Revision |
| 3 | Revision | 2 |
| 15th | 1 | Revision | Group-1 | 1 | Revision and Viva |
| 2 | **Assignment- 3/Quiz** | 2 |
| Group-2 | 1 | Revision and Viva |
| 3 | **Sessional Test- 3** | 2 |