Lesson Plan

Name of Faculty: Sh. Raj Kumar

Discipline: Electronics and Communication Semester: 4th

Subject: Microprocessor & Microcontroller

Lesson Plan Duration: 15 weeks

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| **Week** | **Theory** |  | **Practical** | |
|  | **Lecture Day** | **Topic(including assignment/test)** | **Practical Day** | **Practical Topic** |
| 1 | 1 | Unit 1 : Microcontroller series (MCS) – 51 Overview introduction | 1 | Familiarization with Micro- controller Kit and its different sections |
| 2 | Architecture of 8051Microcontroller | 2 |
| 3 | Pin details | 3 |
| 4 | I/O Port structure |
| 2 | 5 | Memory Organization | 4 | Familiarization with Assembly Language Programming (PC Based) |
| 6 | Special Function Register(SFR) | 5 |
| 7 | External Memory |
| 8 | Revision of chapter 1 | 6 |
| 3 | 9 | Unit 2 : Instruction Set , Instruction  Set of 8051 | 7 | Programming to interface switches and LEDs |
| 10 | Addressing Modes, | 8 |
| 11 | Types of Instructions |
| 12 | Timer operation | 9 |
| 4 | 13 | Serial Port operation | 10 | Programming and interface of Seven Segment and LCD |
| 14 | Assignment 1 | 11 |
| 15 | Interrupts |
| 16 | Revision of chapter 2 | 12 |
| 5 | 17 | Ist sessional test | 13 | Viva Voice |
| 18 | Unit 3 : Assembly/C programming for Micro controller  Assembler directives | 14 |
| 19 | Assembler operation |
| 20 | Compiler operations | 15 |
| 6 | 21 | De bugger | 16 | Programming and interfacing of Graphical LCD |
| 22 | Revision of chapter 3 | 17 |
| 23 | Assignment 2 |
| 24 | Seminar | 18 |
| 7 | 25 | Mock test | 19 | Programming to interface Hex 4x4 matrix Keypad |
| 26 | Revision | 20 |
| 27 | Revision |
| 28 | Unit 4: Design and Interface  introduction | 21 |
| 8 | 29 | Keypad interface | 22 | Viva Voice |
| 30 | 7- segment interface | 23 |

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|  | 31 | LCD, A/D interface with  programming. |  |  |
| 32 | D/A and RTC interface with  programming. | 24 |
| 9 | 33 | Revision of chapter 4 | 25 | Programming for A/D converter, result on LCD |
| 34 | Revision of chapter 4 | 26 |
| 35 | Seminar |
| 36 | Mock test | 27 |
| 10 | 37 | 2nd Sessional Test | 28 | Programming for D/A converter, result on LCD. |
| 38 | Unit 5: Introduction of PIC Micro  controllers | 29 |
| 39 | PIC microcontroller architecture |
| 40 | Explanation of Memory structure,  I/O ports | 30 |
| 11 | 41 | Timers and oscillators | 31 | Viva Voice |
| 42 | Registers | 32 |
| 43 | Application of PIC microcontroller |
| 44 | Revision of chapter 5 | 33 |
| 12 | 45 | Revision of chapter 5 | 34 | Programming for serial data transmission from PC to Kit or Vice versa. |
| 46 | Seminar | 35 |
| 47 | Mock test |
| 48 | Revision of 3rd sessional test | 36 |
| 13 | 49 | Revision of 3rd sessional test | 37 | Viva Voice |
| 50 | Assignment 3 | 38 |
| 51 | 3rd sessional test |
| 52 | Revision of chapter 1 Architecture of 8051Microcontroller, Pin details, I/O  Port structure | 39 |
| 14 | 53 | Memory Organization, Special  Function Register(SFR), External Memory | 40 | Programming and interfacing of RELAY and Buzzer |
| 54 | Revision of chapter 2 | 41 |
| 55 | Unit 2 : Instruction Set , Instruction  Set of 8051 |
| 56 | Revision of chapter 3: Assembly/C programming for Micro controller  Assembler directives | 42 |
| 15 | 57 | Revision of chapter 4: Keypad  interface, segment interface | 43 | Viva Voice |
| 58 | LCD, A/D, D/A | 44 |
| 59 | RTC interface with programming. |
| 60 | Revision of chapter 5: Introduction  of PIC Micro controllers | 45 |