

Module No.	Unit No.	Topics	Hrs
1		Overview of Microprocessor based System	5
	1.1	Overview of microcomputer systems and their building blocks, Memory Interfacing, Steps taken by the microprocessor to fetch and executes an instruction from the memory	
	1.2	Concepts of Program counter register, Reset, Stack and stack pointer , Subroutine, Interrupts and Direct Memory Access	
	1.3	Concept of RISC & CISC Architecture	
	1.4	Harvard & Von Neumann Architecture	
2		The Memory Systems	4
	2.1	Classification of Memory : Primary and Secondary	
	2.2	Types of Semiconductor memories	
	2.3	Cache Memory	
	2.4	Virtual Memory Concept with Memory Management Unit with Segmentation and Paging (Address Translation Mechanism)	
3		8051 Microcontroller	8
	3.1	Comparison between Microprocessor and Microcontroller	
	3.2	Features, architecture and pin configuration	
	3.3	CPU timing and machine cycle	
	3.4	Input / Output ports	
	3.5	Memory organization	
	3.6	Counters and timers	
	3.7	Interrupts	
	3.8	Serial data input and output	
4		8051 Assembly Language Programming and Interfacing	9
	4.1	Addressing modes	
	4.2	Instruction set	
	4.3	Need of Assembler & Cross Assemble, Assembler Directives	
	4.4	Programs related to: arithmetic, logical, delay subroutine , input, output, timer, counters, port, serial communication, and interrupts	
	4.5	Interfacing with LEDs, Relay and Keys	
5		ARM7	8
	5.1	Introduction & Features of ARM 7	
	5.2	Concept of Cortex-A, Cortex-R and Cortex-M	
	5.3	Architectural inheritance, Pipelining	
	5.4	Programmer's model	
	5.5	Brief introduction to exceptions and interrupts handling	
	5.6	Instruction set: Data processing, Data Transfer, Control flow	
6		Study 8 bit microcontroller Applications	5
	6.1	Understanding features of NXP 89v51RD2, Atmega 328P and PIC16F886	
	6.2	Selecting a microcontroller for an application	
	6.3	Study of 89v51 based Clock Using I2C RTC and Seven Segment Display	
	6.4	PIC16F886 Speed Control of DC Motor.	
	6.5	Atmega 328P based remote temperature monitoring with LCD display	
Total			39