

Lesson Plan

Name of the Faculty: Ms. Mahima Goel (Theory and Practical)

Discipline: Mechatronics Engineering

Semester: 6th

Subject: Digital and Embedded Softw. (RT sys) (MT – 304)

Lesson Plan Duration: 15 weeks (from January, 2018 to April, 2018)

Work Load (Lecture/Practical) Per Week (in hours): Lecture - 03, Tutorial – 01, Practical – 02

Week	Theory		Practical	
	Lecture Day	Topic including Assignment/Test)	Practical Day	Topic
1	1	Evolution of Microcontrollers	1	Introduction to microcontroller and interfacing modules
	2	Classification of Microcontroller – On the basis of architecture and instruction set		
	3	Embedded processor, Comparison between Microprocessor and Microcontrollers		
2	1	History of 8051	2	Introduction to KEIL software
	2	Overview of 8051 microcontroller family		Basic programs on Embedded C to add two numbers
	3	Block Diagram of 8051		
3	1	Architecture of 8051	3	Introduction to Proteus Software
	2	Assignment		
	3	Pin Description of 8051 microcontroller (with pin description)		
4	1	Overview of 8051 microcontroller family	4	Practice basic programs on Proteus.
	2	Revision/Doubt Session/Class Test		
	3	8051 Instruction Format		
5	1	Addressing modes	5	Practice basic interfacing problems on Proteus.
	2	Assignment (Test in Tutorial)		
	3	Data transfer instructions		
6	1	Logical operations	6	Practice basic interfacing problems on both KEIL and Proteus together.
	2	Arithmetic operations		
	3	Looping		

7	1	Jump and call instructions	7	To interface the seven segment display with microcontroller 8051.
	2	Time Delay programming		
	3	SFR (Special Function Registers)		
8	1	Assignment	8	To create a series of moving lights using 8051 on LEDs.
	2	Data types in 8051		
	3	Time Delays in 8051		
9	1	Logic and Arithmetic operation in C	9	To interface the stepper motor with microcontroller.
	2	Revision/Doubt Session		
	3	I/O port programming		
10	1	Serial communication using 8051	10	To display character 'A' on 8*8 LED Matrix.
	2	Counter and Timers programming		
	3	Different modes of timer		
11	1	Serial data input / output	11	To switch on and off relay by using keys.
	2	Setting Baud Rate		
	3	Assignment		
12	1	Interrupt Programming –timer interrupts	12	To interface the DC motor using H-Bridge.
	2	External hardware interrupts		
	3	Serial communication interrupt		
13	1	Priority interrupt	13	To interface a keypad with microcontroller.
	2	External memory interfacing		
	3	Microcontroller based seven segment numeric displays		
14	1	Microcontroller interfacing with keypad	14	Practice Lab
	2	Microcontroller based D/A converters		
	3	Revision / Doubt Session		
15	1	Microcontroller based A/D converters	15	Internal Viva
	2	Microcontroller based LCD display		
	3	Motor interfacing with microcontroller 8051		