SATISH KISPOTTA

LESSON PLAN

Subject: Embedded System and VLSI **Semester**: Sixth **Branch**: ET&T

Unit Number	Name of the Topic	No of Class Required	Remarks
Unit 1.0 of Embedded System:	1.1 Embedded System Characteristics	1	
	1.2 Examples: Washing Machine, Chocolate Vending Machine, Room Temperature Controller	1	
	1.3 Operating System(OS):Types of OS, Types of Mobile OS	2	
	1.4 Characteristics of Real Time Operating System	1	
	1.5 Quiz conduction, Doubt Class	1	
	1.6 Unit Test	1	
Unit2.0 8-bit Microcontrollers Architecture (Atmega 8, AVR)	2.1 Microcontroller Types: PIC, AVR, ARM: features and applications	2	
	2.2 AVR microcontroller: Architecture	1	
	2.3 Internal Architectural, Block diagram of controller (Atmega 8) 2.4 Functions of each pins of ATmega 8	2	
	2.4 Configuration of Two 8-bit and One 16-bit Timers and Counters , 6-channel ADC Working	1	
	2.5 Essential Peripheral circuits: Crystal Circuit, Power supply, Oscillator Circuit	1	
	2.6 Initial programming configurations of Atmega8: port, counter, timer, Bootloader Circuit, ISP of Atmega 8	2	
	2.7 Quiz conduction, Doubt Class	1	
	2.8 Unit Test	1	
Unit 3.0 Open Source Embedded Development Board (Arduino)	3.1 Functional Block Diagram of Arduino board Functions of each Pin of Arduino board Arduino Development Board diagram (including different blocks only): IDE, I/O Functions, Looping Techniques, Decision Making Techniques	2	
	3.2 Describe the features of open-source tool used for programming a development board , Programming of an Arduino (Arduino ISP)	2	
	3.3 Arduino Boot loader , Serial Protocol (serial port Interfacing)	1	
	3.4 Initialization of Serial Port using Functions , Basic Circuit For Arduino	1	
	3.5 Interfacing and I/O Concept, Interfacing LED,Switch,7seg LED its and Code, Interfacing DC motor and its Code	1	
	3.6 Quiz conduction, Doubt Class	1	
	3.7 Unit Test	1	
Unit 4.0 Introduction to VLSI	4.1 VLSI Technology-History, Advantages, Disadvantages & Applications	2	
	4.2 Steps for Fabrication on Silicon wafer ,CMOS Fabrication process:	2	
	4.3 STICK diagram & its design Rules	1	
	4.4 Quiz conduction, Doubt Class	1	
	4.5 Unit Test		

Unit 5.0 VHDL Programming	5.1 VHDL Design: Entity and Architecture Declaration , VHDL modeling – Dataflow, behavioural, structural	2	
	5.2 Logic operations viz. AND, OR, NOR, NAND, NOT, EXOR, EXNOR etc	1	
	5.3 Combinational circuit Adder and subtractor	1	
	5.4 Basic sequential circuits- SR, D, RS, T, JK Flip flops	2	
	5.5 Quiz conduction, Doubt Class	1	
	5.6 Unit Test	1	
Total Class Required		42	