



C. U. SHAH UNIVERSITY
Wadhwan City

FACULTY OF: - Technology & Engineering
DEPARTMENT OF: -Electrical Engineering
BRANCH: Electrical & Electronics Engineering
SEMESTER: - VII
CODE: - 4TE07AMC1
NAME – Advance Microcontroller

Teaching & Evaluation Scheme

Subject Code	Name of the Subject	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
		Th	Tu	Pr	Total		Theory				Practical (Marks)			Total
							Sessional Exam		University Exam		Internal		University	
							Marks	Hrs	Marks	Hrs	Pr/Viva	TW	Pr	
4TE07AMC1	Advance Microcontroller	4	0	2	6	5	30	1.5	70	3	--	20	30	150

OBJECTIVES:

- To introduce to the students regarding concept of PIC Microcontrollers.
- To study various applications of PIC controllers.

PREREQUISITES:

- Basic Concept of architecture, programming and Interfacing of 8051.

Course Outlines

Sr. No.	Course Contents	Hours
1	Introduction: Embedded System Programming and the Peripheral Integrated Controller Architecture of PIC 18F family	10
2	Microcontrollers and the PIC16F877: Introduction to The PIC16F877,Memory and Memory Organization Programming the PIC ,Simple PIC Hardware & Software.	10
3	The PIC Instruction Set: Introduction, Data copy, move ,Arithmetic and branch instruction ,Logic, bit manipulation ,Multiply/Divide operations ,Keypad and Display Interface ,The STATUS Register and Flag Bits .The Keypad Software The LED Display Software, Improved Display and Indirect Addressing Odds & Ends Using KEY_SCAN and DISPLAY Together ,A Last Look at the Advanced Security	12

	System	
4	PIC Peripherals and Interrupts: Overview of the PIC Peripherals, Input/Output Ports Port A, Port B, Port C, Port D, Port E, Interrupts ,ADC and Analog MUX ,Watch-Dog Timer ,PIC timers: timer 0, timer 1, timer 2 ,Capture mode and compare mode ,Pulse-Width Modulation (PWM)	12
5	PIC Peripherals, Serial Communications Ports: Introduction ,USART (Overview), USART (Asynchronous Mode, Full-Duplex) ,USART (Synchronous, Master Mode) ,USART (Synchronous, Slave Mode) ,Serial Peripheral Interface (Master Mode) ,Serial Peripheral Interface (Slave Mode)	12

Learning Outcomes

The students will be able to understand the architecture and Interfacing of PIC controller and its various applications.

Books Recommended:

1. “Fundamentals of Microcontrollers and applications in Embedded Systems” by Ramesh Gaonkar, Penram Publications
2. “PIC Microcontrollers and Embedded Systems” by Muhammad Mazaidi, Pearson Publications
3. “Embedded system with programming the PIC 16F877” by , Timothy D. Green, PHI