

**PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY**  
**Department of Electronics & Communication Engineering**

**LESSON PLAN**

**Subject Name: - MICROPROCESSORS AND MICROCONTROLLER**

**Subject Code: EC-210A**

**Year: - 2<sup>nd</sup>**

**Semester: - 4<sup>th</sup>**

Lecture No	Unit No	Topic	References
L 1	UNIT-I	Evolution of Microprocessor	Liu, Gibson, "Microcomputer Systems: The 8086/88 Family", 2nd Edition, PHI,2005.  D.V. Hall, Microprocessors and Interfacing, McGraw Hill 2nd ed.
L 2		Introduction to 8-bit Microprocessor 8085 architecture,	
L 3		Pin Details 8085 Microprocessor	
L 4		8086 Architecture description of data registers, address registers	
L 5		pointer and index registers, PSW, Queue, BIU and EU	
L 6		8086 Pin diagram descriptions	
L 7		Generating 8086 CLK and reset signals using 8284. WAIT state generation	
L 8		Microprocessor BUS types and buffering techniques, 8086 minimum mode and maximum mode CPU module	
L 9		8086 CPU Read/Write timing diagrams in minimum mode and maximum mode	
L 10	UNIT-II	8051 Architecture, On-chip memory organization – general purpose registers, SFR registers, Internal RAM and ROM	M.A. Mazidi, J.G. Mazidi, R. D. McKinlay," The 8051 Microcontroller and Embedded systems using assembly and C" -2nd Ed, Pearson Education.
L 11		Oscillator and Clock circuits	
L 12		Pin Diagram of 8051, I/O Pins, Port	
L 15		Connecting external memory, Counters and Timers, Purpose of TCON & TMOD registers	
L16		Serial data transmission/reception and transmission modes, Purpose of SCON & PCON registers	
L17		Different Types of Interrupts, Purpose of Time Delays, 8051 addressing modes	
L 20		Revisions	
L 21			

L 22	UNIT-III	addressing modes, Data transfer instructions	Barry B. Brey, "The Intel Microprocessor8086/8088, 80186", Pearson Education, Eighth Edition, 2009.
L 23		string instructions, logical instructions, arithmetic instructions	
L 24		transfer of control instructions; process control instructions	
L 25		8051 Data transfer instructions, arithmetic and logical instructions	
L 26		Jump and Call instructions	
L 27		Memory management	
L 28		I/O port, Timer and Counter programming	
L 29		Serial port and Interrupt programming	
L 30	UNIT-IV	Memory devices, Address decoding techniques	Barry B. Brey, "The Intel Microprocessor8086/8088, 80186", Pearson Education, Eighth Edition, 2009.
L 31		Interfacing SRAMS; ROMS/PROMS	
L 32		8086 Interrupt mechanism; interrupt types and interrupt vector table.	
L 33		Intel's 8255 - description and interfacing with 8086	
L 34		ADCs and DACs, - types operation and interfacing with 8086.	
L 35		Interfacing of Matrix Keyboards with 8051	
L 36		ADC, DAC with 8051	
L37		Temperature Sensor with 8051	
L38		Stepper Motor with 8051	
L39		Revision	

#### Text Books:

1. D.V. Hall, Microprocessors and Interfacing, McGraw Hill 2nd ed.
2. Kenneth Ayala," The 8051 Microcontroller" 3rd ed. CENGAGE Learning.
3. M.A. Mazidi, J.G. Mazidi, R. D. McKinlay," The 8051 Microcontroller and Embedded systems using assembly and C" -2nd Ed, Pearson Education.
4. Liu, Gibson, "Microcomputer Systems: The 8086/88 Family", 2nd Edition, PHI,2005.
5. Barry B. Brey, "The Intel Microprocessor8086/8088, 80186", Pearson Education, Eighth Edition, 2009.

#### Reference Books:

1. Mke Predko, "Programming and Customizing the 8051 Microcontroller", TMH.
2. Manish K Patel,"Microcontroller based embedded system", McGraw Hill Education.