

Department of Information Technology

Lesson Plan cum Dairy 2016-17

Name of the Subject: Microprocessors and Interfacing (14BT50431)

Name of the faculty Member: Mr. Shaik Munwar & Mr. Bhasha

Class& Semester: III B.Tech – I Semester

Section: IT – A&B

S. No.	Topic	No. of periods	Book(s) followed	Topics for self study
UNIT – I: INTEL 8086 ARCHITECTURE AND PROGRAMMING				
1.	Evolution of Processors, Architecture of 8086 microprocessor, Register organization	2	T1	8085 Architecture, MP initiated operations, Generation of these signals.
2.	Special functions of general purpose registers, Memory segmentation	1	T1	
3.	Pin description	1	T1	
4.	Minimum and maximum mode of operation of 8086	1	T1, R2	
5.	Timing diagram	1	T1	
6.	Addressing modes, Assembler Directives	1	T1	
7.	Instruction Set	1	T1	
8.	Simple Programs	2	T1	
9.	Procedures and Macros	1	T1	
Total periods required:		11		
UNIT -II: MEMORY INTERFACING, PRIORITY INTERRUPT CONTROLLER AND DMA				
10.	Memory (static RAM and EPROM) and I/O interfacing with 8086	2	R1	Comparison of various address decoders: NAND, 3 to 8 decoder, IC 3625
11.	8257 (DMA controller)	1	T1, R1	
12.	Interrupt structure, interrupt vector table	2	T1	
13.	8259 Programmable Interrupt Controller (PIC)	1	T1	
14.	Importance of cascading of PICs	1	T1	
Total periods required:		07		
UNIT III – 8255A AND ITS APPLICATIONS				
15.	Types of communication-Serial and parallel, Methods of parallel data transfer	1	T1	LED, LCD interfacing
16.	8255A, Programmable peripheral interface internal block diagram	2	T1	
17.	Operational modes and initialization	1	T1	
18.	Interface of I/O devices Keyboard, stepper motor.	3	T1, R2	
Total periods required:		07		
UNIT – IV: SERIAL DATA COMMUNICATION AND STANDARDS				
19.	Types of serial data transmission,	2	T1	I2C, HPIB, GPIB,

S. No.	Topic	No. of periods	Book(s) followed	Topics for self study
	synchronous and asynchronous			IEEE 488 Bus
20.	8251 – USART	2	T1	
21.	Simple programs for sending and receiving characters with an 8251 (polling & interrupt basis)	2	T1	
22.	Serial communication standard – RS232C	1	T1	
23.	RS232C to TTL and TTL to RS232C conversion,	1	T1	
Total periods required:		08		
UNIT – V: 8031/51 Microcontroller Architecture and Programming				
24.	Microcontrollers Vs. general purpose processors, Criterion for choosing microcontroller.	2	T2,R3	DC Motor Speed Control
25.	8051 Architecture- Internal and external memories, Timers/Counters, Serial communication, Interrupts.	2	T2,R3	
26.	Addressing modes, Instruction set of 8051, simple programs using 8051	3	T2,R3	
27.	Timer Programming	1	T2,R3	
28.	Serial port programming	2	T2,R3	
29.	Interrupts programming	2	T2,R3	
Total periods required:		12		
Grand total periods required:		45		

TEXT BOOKS:

T1. Douglas V.Hall, “**Microprocessors and Interfacing: Programming and Hardware**”, revised 2nd edition, TMH.

T2. Mazidi and Mazidi, “**The 8051 Microcontroller and Embedded Systems**”, PHI, 2000.

REFERENCE BOOKS:

R1.A.K. Ray & K.M.Bhurchandi, “**Advanced Microprocessors and Peripherals-Architecture, Programming and Interfacing**”, TMH, 2002.

R2.Yu-cheng Liu, Glenn A. Gibson, “**Microcomputer systems: The 8086/8088 Family architecture, Programming and Design**”, PHI, 2006.

R3.Kenneth J. Ayala, “**The 8051 Microcontroller-Architecture, Programming & Applications**”, Cengage learning, 3rd edition, 2004.