

4142 - MICROPROCESSORS (8085) – I										
Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)					
Lectures	Practical	Credits			Theory		Practical Ex.		Total	
3	2	5	25	25	3 Hrs	100	50		200	
Pre-requisite		Source	Semester	Theory	Test	Total	TW	PR	Gr Total	
4134		EXN		75	25	100	25	50	175	

Rationale: Microprocessors 8085 form the basis of various processors. Microprocessors are abundantly used in various industries and process control systems. Therefore the knowledge of microprocessors is very essential.

COURSE CONTENTS		Hrs	Mks
		10	20

1. 8085 - MICROPROCESSOR

1)History & Evolution of Microprocessors. 2)Architecture & Organization of 8085, Registers, ALU, bus structure, control unit,block diagram of 80853. 3)Pin out diagram-various signals used by 8085 Microprocessor, address bus, data bus, control & status signals, power supply, interrupt & peripheral signals, Address data bus multiplexing. 4) Operations microprocessor initiated operations. Internal data operations, Peripheral initiated operations.5)Memory organisation & mapping

10 20

2. INSTRUCTION AND TIMING

Memory and Instruction – Fetching, decoding and execution of instruction. Classification of instruction – data transfer, logical, branching, machine control. Instruction format – instruction word, size of code format. Addressing modes – Immediate, register, direct and indirect. Instruction timing and operation status,Instruction cycle, machine cycle and Time state

12 25

3. PROGRAMMING THE 8085

Writing assembly language programs for data transfer (copy) operations.Arithmetic operations, Logic operations and Branch Operations.Study of Programming techniques – Looping, counting, indexing, Prowding Time delays. Additional data transfer and 16 bit Arithmetic Instructions.Arithmetic Operations related to Memory

8 16

4. STACK AND SUBROUTINES

Stack, Subroutines, Conditional call and return instructions, Advanced subroutine concepts.

6 14

5. 8085 INTERRUPTS

Description of the interrupt process. Multiple interrupts & priority. Vectored interrupts

2 5

6. INTRODUCTION TO SERIAL & PARALLEL COMMUNICATION

Basic interfacing concepts, interfacing displays & keyboard.

48 100

Total

PRACTICALS:

Familiarizing with full set of instructions of the given microprocessor 8085. Writing assembly & machine language program. The student is expected to perform a minimum of 8 exercises in the assembly language.

REFERENCE BOOKS:

1. Microprocessor Architecture, Programming & Applications by Ramesh S. Gaonkar
2. An Introduction to microprocessor by A.P. Mathur
3. Microprocessors, Theory & Applications by M. Rafiquzzaman

