

10

Course: - MSC(CS)
Sub Code: 2MSC(CS)2

Semester: II
Subject Name- Digital Electronics and Computer Organization

8119

Unit	Lectures	Practical's	Workshops	Demo	Field Visits	Total Hours	Remarks
UNIT-I Introduction to Organization and Architecture: Computer Components, Computer Function, Interconnection Structures, Bus Interconnection, PCI. Input/ Output - External Devices, I/O Modules, Programmed I/O, Interrupt-Driven I/O, Direct Memory Access, I/O Channels and Processors, The External Interface. Integer Representation, Integer Arithmetic, Floating Point Representation, Floating-Point Arithmetic.	8					8	
UNIT-II Computer memory organization - Computer Memory System Overview, Semiconductor Main Memory, Advanced DRAM Organization. Cache Memory, Hit ratio, Mapping techniques, Writing into cache, Magnetic Disk, RAID, Optical Memory, Magnetic Tape. Auxiliary Memory, Memory Hierarchy, Associative Memory, Virtual Memory, Address Space & Memory Space, Address Mapping, Page Table, Page Replacement, Segmentation.	8					8	
UNIT-III Computer Instructions - The Arithmetic and Logic Unit (ALU), Instruction sets - Machine Instruction Characteristics, Types of Operands, Types of Operations, Assembly Language. Addressing Modes and Formats, Addressing, Instruction Formats.	8					8	
UNIT-IV CPU structure and function: Processor Organization, Register Organization, The Instruction Cycle, Instruction Pipelining, The Pentium Processor.	8					8	
UNIT-V Control Unit Operation - Micro - Operations, Control of the CPU, Hardwired Implementation. Basic Concepts of Micro programmed Control.	8					8	
TEXT & REFERENCE BOOKS :							
<ul style="list-style-type: none"> • COMPUTER ORGANIZATION AND ARCHITECTURE BY WILLIAM STALLINGS TMH PUBLICATION • COMPUTER SYSTEM ARCHITECTURE: BY M. MORRIS MANO • DIGITAL LOGIC AND COMPUTER DESIGN BY M. MORRIS MANO 							