

The Maharaja Sayajirao University of Baroda Polytechnic Higher Payment Program Diploma in Computer Engineering			ACADEMIC YEAR 2021-2022		
Year	II	COMPUTER ORGANIZATION & PERIPHERAL DEVICES (CSE3326)	Lecture Hrs per week	4	
Semester	I		Max marks	100	
Pre-requisite: Fundamental computer knowledge.					
CO1	Explain the structure and working of a hypothetical simple computer, including instruction formats, addressing modes, and instruction flow.				
CO2	Describe the fundamental operations of the CPU, including instruction fetching, execution sequencing, control signal generation, and input/output organization with interrupt handling.				
CO3	Identify and compare various storage devices and describe digital information storage concepts such as access methods, memory hierarchy, and semiconductor memory technologies.				
CO4	Explain the organization of main memory, cache memory, and virtual memory, including mapping techniques, page tables, and memory–CPU interfacing and interpret the working principles and types of peripheral devices.				
CO5	Describe the functions of loaders, linkers, and related schemes, and Interpret the working principles.				
BT	1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation				
COURSE CONTENT/SYLLABUS					
Unit	Unit Name		Hrs	Weightage	CO
Unit-1	Hypothetical Machine: Simple Computer, Instruction Formats, Types Of Instructions, Modes Of Addressing, Instruction Flow.		06	12	CO1
Unit-2	Central Processing Unit: Fundamental Concepts, Fetching, Execution Of Instruction, Sequencing Of Control Signals, Input/ Output Organization: Addressing of I/O Devices Data Transfer- Synchronization, Interrupt Handling, I/O Channel And Its Interfaces.		08	14	CO2
Unit-3	Storage Of Digital Information: Types Of Storage Devices, Memory Access And Access Time Sequential And Random Access, Storage Hierarchy, Semiconductor Memory, Disk And Tapes, Ferrite Core Store.		06	12	CO3
Unit-4	Memory Organization: Main Memory, RAM and ROM Chips, Memory Address Map, Memory Connection to CPU, Auxiliary Memory, Associative Memory, Hardware Organization, Read Operation, Write Operation, Cache Memory, Associative Mapping, Direct Mapping, Set-Associative Mapping, Writing into Cache, Cache Initialization, Virtual Memory, Address Space and Memory Space, Address Mapping Using Pages, Associative Memory Page Table, Page Replacement.		08	14	CO3, CO4
Unit-5	Loaders: Loaders, Definition of loader, Functions of loader, Loader Scheme, General Loader Scheme, Absolute loader, Subroutine linkage, Concept of Relocation, Direct Linking Loader, Overlay Structures and Dynamic Loading, Automatic Library Search, Linkage Editor, Direct Linking, Bootstrap Loader, Concept of Linking.		08	14	CO5
Unit-6	Peripheral Devices: Keyboard: Keyboard Switch, Keyboard Organization, Keyboard Types: Original PC/PC-XT Keyboard, PC-AT Keyboard, Enhanced PC-AT Keyboard, Types Of Keys. Mouse: Mouse Types: Mechanical Mouse, Opto-Mechanical Mouse, Optical Mouse, Connecting Mouse: Serial Mouse, Bus Mouse, PS/2 Port Mouse, USB Mouse And Wireless Mouse.		08	14	CO4, CO5
Unit-7	Motherboard Components: CPU, Coprocessor, CMOS Memory, Memory-RAM & ROM, BIOS, Support chips/chipset, Direct Memory Access, Timing Circuits, Chipset: Intel 810 & Intel 845, RAM: Dynamic RAM, Static RAM, ROM: Mask ROM, PROM, EPROM, EEPROM, Flash Memory.		08	14	CO4, CO5
Unit-8	Printers: Image Formation Method: Fully Formed Character Printer, Bit Image Printers, Printing Mechanism: Impact Printer, Non-Impact Printer, Dot-Matrix Printer, InkJet Printer, Laser Printer, How Printers Work: Charge, Expose, Develop, Transfer, Defuse, Detach, Fusing and Cleaning.		04	6	CO4, CO5

		56	100	
REFERENCE BOOKS:				
1.	M. Morris Mano, Computer System Architecture, Pearson Edition			
2.	"Computer Fundamentals Architecture and Organization" by Ram B			
3.	"Fundamentals of Computer Organization and Architecture" by Jyotsna Sengupta			
4.	Andrew S. Tanenbaum and Todd Austin, Structured Computer Organization, Sixth Edition, PHI			