CP206: Computer Organization

Teaching Scheme			Credits	Marks Distribution				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE	CE	ESE	CE	
4	0	2	6	70	30	30	20	150

Course Contents:

Sr. No.	Topics	Teaching Hrs.
1	**Basic Structure of Computers:** Block Diagram of General Purpose Computers; Detailed Understanding of Each Functional Unit; Data Transfer Across Bus; Simple Bus Structures With Registers and Memory; Details of Address; Control and Data Bus with Interfacing.	06
2	**Instruction Set:** Instruction format; Addressing Modes. Instruction Set of A Simple Real World Microprocessor (8085) Covering Data Transfer; Arithmetic; Logical; Control; Subroutine; Stack; Basic I/O and Interrupt Operations.	15
3	**Central Processor Unit Design:** Single Bus Architecture; Detailed Design of Execution Unit Using Hardwired Control as Well As Microprogrammed Control; Horizontal and Vertical Microinstructions; Concept of Nano-programming; Introduction to RISC and CISC Architectures.	12
4	**Arithmetic Processor Design:** Addition; Subtraction; Multiplication and Division Algorithms in Signed Binary Arithmetic for Fixed and Floating Point Representations and Related Design Standards and Issues.	08
5	**Memory Organisation:** Types of Memory; Memory Hierarchies; Organisation of Static and Dynamic Semiconductor Memories; Associative Memory Organization; Cache Organization.	08

6	**Input Output Organisation:**	06
	Device Interfacing and Selection; Memory and I/O Mapped I/Os; Modes of Data Transfer-Programmed; Interrupt and DMA Driven I/O-Interrupt Types and Priority Schemes; Synchronous and Asynchronous Data Transfer.	
7	**Pipeline And Vector Processing:**	05
	Flynn's taxonomy; Parallel Processing; Pipelining; Arithmetic Pipeline; Instruction; Pipeline; RISC Pipeline; Vector Processing; Array Processors**.**	
	Total Hrs.	**60**

Reference Books:

1. Hama Cher, Vranesic and Zaky, "*Computer Organization*", International Edition.
2. M. Morris Mano, "*Computer System Architecture*", Pearson.
3. Andrew S. Tanenbaum and Todd Austin, "*Structured Computer Organization*".
4. N D Jotwani, "*Computer system organization*", Tata McGraw hill.
5. R.S.Gaonkar, "*Microprocessor Architecture, Programming and Applications with 8085A*", Pen ram International.