

Course Code	Course Title	C	H	I	E	T
17U2DMC4	COMPUTER ORGANIZATION AND ARCHITECTURE	4	5	25	75	100

**UNIT I: Basic Computer Organization (15 hours)**

Instruction Codes – Computer Registers – Computer Instructions – Timing and Control – Instruction Cycle – Control Memory – Address Sequencing.

**UNIT II: CPU (15 hours)**

General Register Organization – Stack Organization – Instruction Formats – Addressing Modes – Program control.

**UNIT III: Computer Arithmetic (15 hours)**

Hardware Implementation and Algorithm for Addition, Subtraction, Multiplication, Division – Booth Multiplication Algorithm – Floating Point Arithmetic.

**UNIT IV: I/O and Memory Organization (15 hours)**

I/O Interface – Asynchronous Data Transfer – Modes of I/O Transfer – Priority Interrupt – Direct Memory Access - Memory Hierarchy – Main Memory – Auxiliary Memory – Associative Memory – Cache Memory – Virtual Memory.

**UNIT V : Advanced Processing (15 hours)**

RISC, CISC Characteristics - Parallel Processing – Pipe Lining – vector processing – array processors – Multi processors – Interconnections structures.

**Text Book:**

M. Morris Mano, Computer System Architecture, Third Edition , 2003 , Prentice Hall of India.

**Chapters:**

Unit I: 5.1 to 5.5, 7.1 to 7.2,

Unit II: 8.1 to 8.5, 8.7,

Unit III: 10.1 to 10.5

Unit IV: 11.2 to 11.6, 12.1 to 12.6 &

Unit V: 8.8, 9.1, 9.2, 9.6, 9.7, 13.1, 13.2

**Reference Books:**

1. A. S. Tanenbaum, Structured Computer Organization, PHI.
2. M.Morris Mano , Digital Logic & Computer Design, 2006,PHI.
3. Alan B.Marcovitz, Introduction to Logic design, 2nd edition,2005, TMH.