

CORE COURSE XIV: 6B14CSC COMPUTER ORGANIZATION

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HRS
6	6B14CSC	3	3	3

COURSE OUTCOME

CO1: Understand the basic terminology of computer system.

CO2: Understand the functional units of a computer system.

CO3: Understand the basic operations of a computer system.

CO4: Understand the memory organization in a computer system.

Unit I:

Basic structure of computer-Types of computers-Functional Units-Basic Operational Concepts-Bus Structure-Multiprocessors and Multi computers-Data Representation-Fixed Point representation and floating-point representation.

(9 Hrs)

Unit II:

Register Transfer and Micro operations – Register Transfer language-Register Transfer-Bus and memory Transfer-Three state bus buffers-Memory Transfer-Basic Computer Organization and Design – Instruction Codes – Fetch & Decode Instructions – Register Reference Instructions – Memory Reference Instruction – Input output & Interrupt.

(14 Hrs)

Unit III:

Micro Programmed Control – Control Memory – Address sequencing – Central Processing Unit – General Register Organization – Control word – Stack Organization – Register stack - Memory Stack – Reverse Polish notation – Evolution of Arithmetic expressions – Instruction Formats – Addressing modes – Data Transfer and Manipulations – reduced Instruction set computer(RISC).

(16 Hrs)

Unit IV:

Input Output Organization– Input/Output Interfaces –Asynchronous Data Transfer – Modes of transfer –Priority Interrupt – Direct Memory Access (DMA) - Input Output Processor - Serial Communications. Memory Organization – Hierarchy – Main memory – Auxiliary Memory –Associative Memory – Cache memory – Mapping – Multiprocessors

– Characteristics of multiprocessors - Inter connection structures.

(15 Hrs)

Books for Study:

1. Computer system Architecture –M.Morris Mano - PHI Pvt Limited
2. Computer Organization - Carl Hamacher –International Edition

Books for Reference:

1. Computer Organization and Architecture, William Stallings, 7th Edn, Pearson Education.
2. Computer Architecture & Organization John P Hayes –McGraw Hill

Marks including choice:

Unit	Marks
I	10
II	18
III	15
IV	17