PCS4G002 COMPUTER ORGANIZATION & ARCHITECTURE

Module – I (06 Hrs)

Basic structures of Computers: Computer Architecture vs. Computer Organization, Functional units, Operational concepts, Registers, Bus and Bus organization, Memory location and addresses, Big-endian and Little-endian representation.

Module – II (14 Hrs)

Basic Processing Units: Fundamental concepts, Instruction format, Instruction set, Addressing modes. Instruction Sequencing, Execution cycle, Hardwired control, Micro programmed control.
Memory System: Basic Concepts, Memory hierarchy, Main Memory, Secondary storage, Cache memory.

Module – III (8 Hrs)

Arithmetic: Addition and Subtraction of signed and unsigned numbers, Multiplication of signed and unsigned numbers, Booth Multiplier, Array Multiplier, Integer Division, Floating- point Numbers and operations.

Module – IV (12 Hrs)

Microprocessors, Instruction set, Assembly Language Programming, Stack, Subroutine, Interrupt, Accessing I/O devices, Standard I/O Interfaces- RS-232C, IEEE-488, USB, Data Transfer techniques.

Text Books:

1. Computer Organization: Carl Hamacher, Zvonkovranesic, Safwat Zaky, McGraw Hill
2. Computer system Architecture: Morris M. Mano PHI.

Reference Book:

1. Computer Architecture: Parhami, Oxford University Press
2. Computer Architecture and Organization: William Stallings, Pearson Education.
3. Computer Architecture and Organization: John P.Hayes McGraw Hill.
4. Computer Architecture and Organization: An Integrated Approach, Murdocca, Heuring Willey India.
5. Computer Organization and Design Hardware/ Software Interface: David A. Patterson, John L. Hennessy, Elsevier.