MCC202 - COMPUTER ORGANIZATION AND SYSTEM ARCHITECTURE(3-1-0)

Module I: (15 Hours)

Introduction: Basic architecture of computer, Functional units, Operational concepts, Bus structures, Von Neumann Concept.

Basic Processing: Instruction code, Instruction set, Instruction sequencing, Instruction cycle, Instruction format, Addressing modes, Micro instruction, Data path, Hardwired controlled unit, Micro programmed controlled unit.

Arithmetic: Design of ALU, Binary arithmetic, Addition and Subtraction of signed number, Multiplication of Positive number, Signed operand multiplication, Division, Floating point number representation and arithmetic.

Module II: (12 Hours)

Memory: Memory Hierarchy, RAM, ROM, Cache memory organization, Mapping techniques, Virtual memory, Mapping technique, Associative memory, Memory Interleaving, Secondary Storage, Flash drives.

Module III (13 Hours)

Input/Output: Accessing I/O devices, I/O mapped I/O, Programmed I/O, Memory Mapped I/O, Interrupt Driven I/O, Standard I/O interfaces, Synchronous and Asynchronous Data transfer, DMA data transfer.

Introduction to Parallel processing: Flynn's Classification, Pipelining, Array processing, vector processing

Text Books:

1. V. Rajaraman, and T. Radhakrishnan, " Computer Organization and Architecture", Prentice-hall of India
2. M. Murdocca," Computer Architecture and Organization- An Integrated Approach", Willey India Pvt Ltd

Reference Books:

1. William Stalling , " Computer Organization and Architecture "Pearson Education
2. J. P. Hayes "Computer Architecture and Organization" McGraw Hill Education India.
3. Carl Hamacher, Zvonko Vranesic, Safwat Zaky, "ComputerOrganization", 5th Edition, Mc Graw-Hill Education India
4. A.S. Tananbaum "Structured Computer Organization" Pearson Education.