COMPUTER ORGANIZATION
R 402 2+1+0

Module 1
Introduction: Organization and Architecture – Review of basic operational concepts – CPU- single bus and two bus organization, Execution of a complete instruction – interconnection structures – layered view of a computer system.

Module 2
CPU - Arithmetic: Signed addition and subtraction – serial and parallel adder – BCD adder – Carry look ahead adder, Multiplication – Array multiplier – Booth's Algorithm, Division – Restoring and non-restoring division, floating point arithmetic - ALU Design.

Module 3
Control Unit Organization: Processor Logic Design – Processor Organization – Control Logic Design – Control Organization – Hardwared control – Microprogram control – PLA control – Microprogram sequencer, Horizontal and vertical micro instructions – Nano instructions.

Module 4
Memory: Memory hierarchy – RAM and ROM – Memory system considerations – Associative memory, Virtual memory – Cache memory – Memory interleaving.

Module 5
Input – Output: Printers, Plotters, Displays, Keyboard, Mouse, OMR and OCR, Device interface – I/O processor – Standard I/O interfaces – RS 232 C, IEEE 488.2 (GPIB).

References

1. Computer Organization - Hamacher, Vranesic and Zaky, Mc Graw Hill
2. Digital Logic and Computer Design - Morris Mano, PHI
3. Computer Organization and Architecture -William Stallings, Pearson Education Asia.
4. Computer Organization and Design - Pal Chaudhuri, PHI
5. Computer Organization and Architecture -M Morris Mano, PHI
6. Computer Architecture and Organization - John P Hayes, Mc Graw Hill