EE-405: Computer Architecture

Credit	L	T	P
4	**3**	**1**	**-**

UNIT –I

Introduction, Regiter section, General purpose register design. Adder and Subtractor design, Fast adder design, ALU design, Multiplication of unsigned and signed integer, Array multiplier, Division of unsigned integer.

UNIT – II

Introduction, Basic concepts of register transfer language (Micro operation), control unit design, Hardwired control, Multiplier control unit, CPU control unit, Micro programmed control, Basic concepts control memory.

UNIT – III

Introduction Characteristics of memory system, memory unit, Randon access memory (RAM), Bipolar memory cell, dynamic memory cell, Internal organization of RAM, Main Memory design, Cache memory, Associative memory, concepts, Associative memory cell.

UNIT – IV

Basic concepts, Programmed I/O, Standard I/O versus memory mapped I/O, Unconditional and conditional programmed I/O, Interrput I/O, Direct memory access (DMA), Virtual memory and memory management concepts, Magnetic taps and Disk.

UNIT –V

Introduction, parallelism in conventional computers, Type of parallel processors, Array processors, Systolic arrays wave front array processors pipeline processing, basic concepts pipeline structure. Arithmetic pipeline, Instruction pipeline.

TEXT/REFFERENCE BOOKS

1. Morris Mano, “Computer System Architecture”, Pearson, 2007.
2. Mohamed Rafiquzzaman, “Modern Computer Architecture”, Galgotia Publications, 1988
3. John P.Hayes, ‘Computer architecture and Organization’, Tata McGraw- Hill,Third edition, 1998.
4. V. Carl Hamacher, Zvonko G. Varanesic and Safat G. Zaky, “ Computer Organization“, V edition, McGraw-Hill Inc, 1996