

**SECOND ALLIED COURSE (AC) II
COMPUTER ARCHITECTURE AND ORGANIZATION**

Unit I Basic Computer and Design

Instruction codes – Computer Instructions – Timing and control – execution of instruction – input / output and interrupt.

Unit II Central Processor Organization

Processor – bus organization – ALU – Stack Organization – instruction format – Addressing modes – data transfer and manipulation – program control – microprocessor organization – parallel processing.

Micro program control organization – control - memory – address – sequencing – micro – program sequence – micro instruction formats.

Unit III Arithmetic Processor Design

Comparison and subtraction of unsigned binary number – Addition and subtraction algorithm – multiplication algorithm – division algorithm – processor configuration.

Unit IV Input – output organization

Peripheral device – I/o interface – asynchronous data transfer – direct memory access input output processor – priority interrupt – multiprocessor system organization.

Unit V Memory

Volatile and non volatile memory – RAM – ROM – digital recording – techniques – auxiliary memory – microcomputer memory – hierarchy – associative memory – virtual memory cache memory.

Text Books:

1. Computer System Architecture – M.Morris Mano
2. Digital Computer Fundamentals – Thomas C.Bartee.

Reference:

Computer Organization and Programming – C.W. Gean.