CO SYLLABUS FOR SEM 3

UNIT I:

Register Transfer and Micro-Operations:

- Register Transfer Language
- Register Transfer
- Bus and memory Transfers
- Arithmetic Micro-operations
- Logic Micro operations
- Shift Micro-operations
- Arithmetic Logic Shift Unit.

Basic Computer Organization and Design:

- Instruction codes
- Computer Registers
- Computer Instructions
- Timing and Control
- Instruction cycle
- Memory-Reference Instruction
- Input-Output and Interrupt

UNIT II:

Micro Programmed Control:

- Control Memory
- Address Sequencing
- Micro-Program example
- Design of Control Unit.

Central Processing Unit:

- General Register Organization
- Stack Organization
- Instruction Formats
- Addressing Modes
- Reduced Instruction Set Computer – CISC , RISC Characteristics.

UNIT III:

Computer Arithmetic:

- Addition and Subtraction
- Multiplication Algorithms
- Division Algorithms
- Floating Point Arithmetic operations

Memory Organization:

- Memory Hierarchy
- Associative Memory
- Cache Memory

UNIT IV:

Input-Output Organization:

- Input-output Interface
- Asynchronous Data Transfer
- Modes of Transfer
- Priority Interrupt
- Direct Memory Access (DMA).

Multiprocessors:

- Characteristics of Multiprocessors
- Interconnection structures.