

**0903 –DIPLOMA IN ELECTRONICS & COMMUNICATION
SEMESTER -6
090364(b) - COMPUTER ARCHITECTURE & ORGANISATION.**

RATIONALE

This course will provide the student with the knowledge of detailed organisation of currently available organisation based on bus structure & principle of working of various other components & also they learn as to how the basic components of computer interact with each other. to form a working system.

DETAILED CONTENTS

1. Basic computer organisation & design

Instruction lodes, indirect & direct address, computer registers, common bus system, computer instructions, timing control, instruction memory reference, Register reference & reference instructions. Interrupts, hard wire & microprogrammed control unit.

2. Central Processing Unit

Introduction, general register organisation, control word, examples of microinstructions, stack organisation, register stack, reverse. Polish notation evaluation of anith expressions. Instruction formats, Addressing modes, 3 address instructions, 2 Address instructions. One address instructions, zero address instructions. Types of interrupts, compare RISC & CISC.

3. Computer Arithmetic

Introduction, addition & subtraction, multiplication, & Division algorithms.

4. Register transfer & micro operations

Register transfer language, arithmetic, logic & shift micro operation:

5. Input-output organisation

Input-output interface, I bus, & interface4 module, I vs memory bus. Isolated Vs memory mapped I, Modes of data, transfer, first in first out buffer, priority interrupt, daisy chaining priority, parallel priority interrupt priority encoder, interrupt cycle, Direct memory access, DMA controller, DMA transfer.

6. Memory organisation

Memory hierarchy, main memory, memory, address, map, RAM & ROM chips, memory connection to CPU, Anxillary memory, Associative memory, Read & write operation. Cache memory, Associative maping, Virtual memory, memory management hardware, memory segmentation .

RECOMMENDED BOOKS

1. Computer System and Architecture by M. Mano: Prentice Hall India Pvt. Ltd., New Delhi.
2. Computer Architecure and Organizationn by JP Hays, MC Graw Hill company, New

Delhi.

3. Computer Organization and Architecture by W. Stallings: Prentice Hall of India Ltd., New Delhi.