**CSE 203 COMPUTER ORGANIZATION AND DESIGN**

**[3 1 0 4]**

1.BASIC STRUCTURE OF COMPUTERS:

Computer types, Functional units, Basic operational concepts, Bus structures,

Software, Performance.

(1.1,1.2, 1.3,1.4, 1.5,1.6 of Text Book 1) (2 hrs)

2. MACHINE INSTRUCTIONS AND PROGRAMS:

Numbers, arithmetic operations and characters, Memory locations and addresses, Memory operations, Addressing modes.

(2.1 to 2.5.5 of Text Book 1) (3 hrs)

3. EXECUTION UNIT:

Addition and subtraction of signed numbers, Adders, ALU design, Bit slice processor, Multiplication of positive numbers Signed operand multiplication, Fast multiplication, Integer division, Floating point numbers and operations

(3.3, 3.4, 3.5 of Text 2, 6.1 to 6.7of Text Book1)

(14 hrs)

4. CONTROL UNIT:

Introduction, Basic concepts, Design methods

(4.1 to 4.3.2 of Text Book 2) (11 hrs)

5. MEMORY SYSTEMS:

Basic concepts, RAM memories, Read only memories, Speed size and cost, Cache memories, Performance considerations, Virtual memories, Memory

Management Requirements, Secondary storage

(5.1 ,5.2, 5.2.1, 5.2.2, 5.2.5, 5.2.6, 5.3, 5.3.1 to 5.3.5, 5.4, 5.5, 5.5.1 to 5.5.3, 5.6,

5.6.2 to 5.6.3, 5.7, 5.7.1,5.9, 5.9.1 to 5.9.2 of Text Book 1) (10 hrs)

6. INPUT/OUTPUT ORGANIZATION:

Accessing I/O devices, Interrupts, Direct memory access, Buses, Interface circuits

(4.1, 4.2, 4.2.1 to 4.2.5 ,4.4, 4.5, 4.5.1 to 4.5.2,4.6, 4.6.1, 4.6.2 of Text Book 1)

(8 hrs)

**Text Books:**

1. Carl Hamacher, ZvonkoVranesic and SafwatZaky, “Computer Organization”, McGraw Hill International Edition, Fifth edition, (2002).
2. Mohammed Rafiquzzaman and Rajan Chandra,(2008)“Modern Computer Architecture”, Galgotia Publications Pvt. Ltd.

**References:**

1. William Stallings, “Computer Organization and Architecture – Designing for Performance”, 8th edition, PHI, 2009.