Branch: BCA	Semester-III
Subject Code: 3103	Lecture: 04 Credit: 04
Subject Title	COMPUTER ORGANIZATION AND ARCHITECTURE

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weightage %
UNIT-I	1	**Computer Structures:** Computercomponents,Computerfunctions,Basic instruction cycle(Fetch & Execute), Interrupts, Instruction Cycle with interrupts, Multiple Interrupts, I/ofunctions,Interconnectionstructure,Bus Interconnection structures, Bus structure, Multiple bus hierarchy, Elements of Bus design	8	16
UNIT-II	2	**Internal memory:** Characteristics of memory system Memory hierarchy Semiconductor main memory, Basic concepts, RAM (Static and Dynamic), ROM (PROM, EPROM, EEPROM, FLASH MEMORY), Memory Module organization, Cache Memory, Principle, Elementsofcachedesign(Size,Mapping, Replacement, Write policies, Block size), Error detecting & correcting code	12	24
UNIT-III	3	**External Memory:** Magnetic disk, Data organization and Format, Characteristics, Disk access time, Optical Memory, CD-ROMs, WORM, Erasable optical disk, DVD, Magnetic tape , Difference between disk & tape & DVD	10	20

	4	Input/Output
		- Introduction
		- Access to I/O devices
		- I/O Modules (Functions and structures)
		- Programmed I/O
		  - Overview
		  - I/O Commands
		  - I/O Instruction
		  - Flowcharts
		- Interrupt driven I/O
		  - Interrupt processing
		  - Design Issues
		- Drawbacks of Programmed & interrupt I/O
		- Direct Memory Access
			10	20

		o DMA Functions □ I/O channels & Processes Evolution of I/O Function Characteristics of I/O channels		
UNIT-IV	5	Advanced Architecture □ Parallel Processing (SISD, SIMD, MISD and MIMD) □ RISC and CISC o Characteristics o RISC Pipelining	10	20
		Total	50	100

Text Books:

1. William Stallings,"Computer Organisation and Architecture",Prentice Hall PTR, 07-Aug-2003

References:

1. Jain, "Modern Digital Electronic",McGraw Hill, 2008
2. Morris Mano."Computer System Architecture",Pearson Custom Publishing, 2001
3. Hwang,"Advanced Computer Architecture",Tata McGraw Hill Education,2003
4. Michael J. Flynn, "Computer Architecture", Narosa Publishing,1995
5. Devale,"Computer Organisation and Architecture", 2004