Teaching Plan

Jan – Apr 2022

Name of the Faculty : Ms Richa Gupta

Name of the Course : BSc (Prog) Physical Science with computer

Semester : IV

Title of the Paper : Computer System Architecture (Theory)

Course Learning Outcomes

On successful completion of the course, students will be able to :

1. design combinational circuits using basic building blocks. Simplify these circuits using Boolean Algebra and Karnaugh maps.
2. differentiate between combinational circuits and sequential circuits
3. represent data in binary form, convert numeric data between different number systems and perform arithmetic operations in binary.
4. determine various stages of instruction cycle, various instruction formats and instruction set.
5. describe interrupts and their handling.
6. explain how CPU communicates with memory and I/O devices

Month	Topics Covered	References
January	Chapter 1 – Digital Logic circuits (Logic gates, flip flops, Logic circuit simplification) Exercises based on Chapter 1 Quiz based on Chapter 1 Chapter 2 – Digital components (Decoder, Encoder, Multiplexers, adder, subtractor, incrementer and registers) Exercises based on Chapter 2 Quiz based on Chapter 2	
February	Chapter 3 – Data Representation (Different radix, conversion, complements, signed and unsigned numbers) Exercises based on Chapter 3 Quiz based on Chapter 3 Chapter 4 – Register Transfer and Microoperations (Register organization, arithmetic and logical operations) Exercises based on Chapter 4	M.Morris Mano, Third Edition

	Quiz based on Chapter 4	
March	Chapter 5 – Basic Comp Organization (Instruction set, cycle, memory and register reference instructions, interrupt cycle, addressing modes) Exercises based on Chapter 5	
	Written Test based on Chapters 3,4,5	
	Chapter 8 – Programming the basic computer (microprogrammed and hardwired control, addressing modes) Exercises based on Chapter 8	
April	Chapter 11 – Input-output orgaization (Peripherel devices, I/O vs memory bus, memory mapped I/O, DMA) Exercises based on Chapter 11 Test on chapter 5,8 Revision Series	

Title of the Paper : Computer System Architecture (Practical)

Month	Topics Covered	References
February	- Conversion of a number from one radix to another - Logical operator on binary numbers	M.Morris Mano, Third Edition
March	- One's and two's complement - Up-down binary counter - Addition and subtraction - Left and right shift	
April	- Selective set logical operation - Selective complement	

	- Selective clear Mock viva of all students All the above programs will have a start and completion date and your internal assessment will be marked accordingly.	