



**Netaji Subhash Chander Bose Memorial  
Govt. College, Hamirpur,  
Himachal Pradesh**

Tel. No.: 01972-222227, FAX: 01972-222227, E-mail: gchamirpur-hp@nic.in



**School of Computer Applications**

**Teaching Plan Odd Semester Session (2024-2025)**

**Class: PGDCA -1<sup>st</sup> Semester**

**Name of the Teacher: Prof. Pankajl Kumar**

**Subject: Computer Organization and Architecture Period: 4<sup>th</sup> (12:10PM-1:30PM)**

**Course Code: DCS 104**

**Room No: PGDCA**

S. No	Aims to be completed	Topics to be covered
Week 1	10-08-2024	Orientation and introduction about the subject
	12-08-2024 to 17-08-2024	Basics: Organization & Architecture, Structure & Function, A brief history, mechanical & electromechanical ancestors First, Second, Third & later generations, VanNeumann Machine, Block diagrams of computer system
Week 2	19-08-2024 to 24-08-2024	Register transfers & micro-operations: Register Transfer Language, Register transfer
Week 3	26-08-2024 to 31-08-2024	Bus & memory transfers, Arithmetic loops, Logic loops, Shift loops, Arithmetic, logic, shift unit
Week 4	02-09-2024 to 07-09-2024	Basic computer organization & design: Instruction codes, Computer registers, Computer Instructions, Timing & Control, Instruction cycle
Week 5	09-09-2024 to 04-09-2024	Memory reference instruction, I-O interrupt, Design of basic computer, Design of accumulator logic
Week 6	16-09-2024 to 21-09-2024	Micro-programmed Control: Control Memory, Address sequencing, Design of control unit
Week 7	23-09-2024 to 28-09-2024	Central Processing Unit: General Register Organization, Stack organization, Instruction formats (zero, one, two, three), Address Instructions
Week 8	30-09-2024 to 05-10-2024	Addressing Modes (direct, indirect, Immediate, relative, indexed), Data transfer & manipulation, Program control, RISC
Week 9	07-10-2024 to 12-10-2024	Computer Arithmetic: Addition & Subtraction, Multiplication algorithms, Division Algorithms, Floating point arithmetic operations

<b>Week 10</b>	<b>14-10-2024 to 19-10-2024</b>	IO Organization: Peripheral devices, I/O interfaces, asynchronous data transfer, Modes of Data transfer, Priority Interrupts, DMA, I-O processors, Serial Communication
<b>Week 11</b>	<b>21-10-2024 to 28-10-2024</b>	Memory Organization: Memory Hierarchy, Main Memory, Associative Memory, Cache Memory, Virtual Memory, Memory management hardware
<b>Week 12</b>	<b>29-10-2024 to 02-11-2024</b>	<b>Diwali Break</b>
<b>Week 13</b>	<b>04-11-2024 to 09-11-2024</b>	Multiprocessors: Characteristics, Interconnection structures: Time shared, Common bus, Multi-port, Crossbar switch, Multistage, Inter-processor arbitration
<b>Week 14</b>	<b>11-11-2024 To 16-11-2024</b>	Inter processor communication & synchronization, cache coherence, multiprocessing, vector computation, Fault tolerant systems
<b>Week 15</b>	<b>18-11-2024 To 23-11-2024</b>	RISC: Instruction execution characteristics, Use of large register files, Computer based Register optimization, Reduced instruction set architecture, RISC pipeline
<b>Week 16</b>	<b>25-11-2024 To 30-11-2024</b>	Revision round and overview of entire syllabus of <b>Computer Organization and Architecture</b>