



B. P. Poddar Institute of Management & Technology
Department of Electronics & Communication Engineering
Academic Year: 2024-25



Course Name: Computer Architecture

Course Code: EC 502

S. No.	Lecture/ Tutorial No	Topics to be Covered	Text/ References	Teaching Pedagogy*
1	L1	Basic Structure of Computers		TA: chalk/ green board, LCD projector TM: Lecture, PPT
2	L2	Functional units	T1, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
3	L3	software, performance issues software, machine instructions and programs	T1, T2, T3, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
4	L4	Types of instructions, Instruction sets: Instruction formats,	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
5	L5	Assembly language, Stacks, Ques, Subroutines	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
6	L4	Processor organization	T1, T2, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT

7	L5	Information representation	T1, T2, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT
8	L6	number formats	T1, T2, T3, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT
9	T3	Multiplication & division	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
10	L7	ALU design	T1, T2, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
11	L8	Floating Point arithmetic	T1, T2, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
12	L9	IEEE 754 floating point formats	T1, T2, T3, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
13	L10	Control Design, Instruction sequencing	T1, T2, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
14	L11	Interpretation, Hard wired control	T1, T2, T3, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
15	T4	Hard wired control - Design methods, and CPU control unit	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
16	L12	Microprogrammed Control - Basic concepts,	R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT

17	T5	minimizing microinstruction size, multiplier control unit. Microprogrammed computers - CPU control unit	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
18	L13	Memory organization, device characteristics	T1, T2, T3, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT
19	T6	RAM, ROM, Memory management	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
20	L14	Concept of Cache & associative memories	T1, T2, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT
21	T7	Virtual memory	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
22	L15	System organization	T1, T3, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
23	L16	Input - Output systems, Interrupt	T1, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
24	L17	DMA, Standard I/O interfaces	T1, T2, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
25	L18	Concept of parallel processing	T1, T2, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
26	L19	Pipelining, Forms of parallel processing	R1	TA: chalk/ green board, LCD projector

				TM: Lecture, PPT, classroom discussion
27	L20	interconnect network	T1, R1	TA: chalk/ green board, LCD projector TM: Lecture, PPT
28	L21	Processors an overview	R1, R2	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
29	T8	Co-processors	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
30	T9	Math co-processor	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
31	T10	Memory management	R1	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion
32	L22	Hazards brief overview	R1, R2	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
33	L23	PMF, CDF, PDF, expectation, variance and standard deviation	R1, R2	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
34	L24	Distribution functions	R1, R2	TA: chalk/ green board, LCD projector TM: Lecture, PPT, classroom discussion
35	T11	Problems on communication systems using statistical analysis	R1, R2	TA: chalk/ green board, LCD projector TM: PPT, problem solving, classroom discussion

36	L25	Discussions on previous year questions		TA: chalk/ green board TM: Quiz, problem solving, classroom discussion
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Text Books (T):

1. V.Carl Hammacher, "Computer Organisation", Fifth Edition.
2. A.S.Tanenbum, "Structured Computer Organisation", PHI, Third edition
3. Y.Chu, "Computer Organization and Microprogramming", II, Englewood Chiffs, N.J. Prentice Hall Edition
4. M.M.Mano, "Computer System Architecture", Edition

Reference Books (R):

1. C.W.Gear, "Computer Organization and Programming", McGraw Hill, N.V. Edition
2. Hayes J.P, "Computer Architecture and Organization", PHI, Second edition

Web Resources (WR):

1. <https://nptel.ac.in/courses/106102157>
2. <https://www.mbit.edu.in/wp-content/uploads/2020/05/computer-systems-Architecture.pdf>

Teaching Pedagogy:

S. No.	Abbreviation	Full Form
1.	C&T	Chalk & Talk
2.	PPT	Power Point Presentation
3.	CD	Classroom Discussions
4.	Q	Quiz
5.	PS	Problem Solving