COA Spring 2024-2025 Lesson Plan

Course Name: Computer Organization and Architecture Spring 2024-2025
Course code: (CS21002)
Course Coordinator: Dr. Asif Uddin Khan
Course Teacher:

Day	Chapter	Topic	No. of lecture
Day-1	**Basic Structure of Computers**	Introduction, Computer Types	1
Day-2		CA and CO and their relationship, Von-Neumann Vs Harvard concept	1
Day-3		Functional units, Basic operational concepts, Bus Structures and Types	1
Day-4,5		Basic Performance measurement	2
Day-6		RISC and CISC	1
Day-6	**Machine Instructions and Programs**	Memory location and Addressing mechanism	1
Day-7		Big- and Little-Endian schemes	1
Day-8		Memory operations, Instruction and instruction sequencing	1
Day-9		Instruction Format, Instruction length (0,1,2,3 address) with problem 1	1
Day-10		Instruction Format, Instruction length (0,1,2,3 address) with problem 2	1
Day-11		Instruction Format, Instruction length (0,1,2,3 address) with problem 3	1
Day-12		Different CPU organization(GPRS, STACK, ACCUMULATOR)	1
Day-13		Addressing modes 1	1
Day-14		Addressing modes 2	1
Day-15		Assembly Language	1
Day-16		Basic Input and Output Operations, Subroutines	1
Day-17		Additional Instructions (Logic and Shift/Rotate Instructions)	1
Day-18		Tutorial Activity (Quiz/Test/Assignment)	1
Day-19	**Basic Processing Unit**	Fundamental concept, Steps taken by CPU	1
Day-20		Single bus CPU organization	1
Day-21		Control signals required for an instruction Execution of a complete instruction 1	1
Day-22		Control signals required for an instruction Execution of a complete instruction 2	1

COA Spring 2024-2025 Lesson Plan

Course Name: Computer Organization and Architecture Spring 2024-2025
Course code: (CS21002)
Course Coordinator: Dr. Asif Uddin Khan
Course Teacher:

Day-23		Control signals required for an instruction Execution of a complete instruction 3	1
Day-24		Multiple bus CPU organization 1	1
Day-25		Multiple bus CPU organization 2	1
Day-26		Design of control unit: Hardwired 1	1
Day-27		Design of control unit: Hardwired 2	1
Day-28		Design of control unit: Micro programmed	1
Day-29		Tutorial Activity (Quiz/Test/Assignment)	1
Mid sem		TUTORIAL/ACTIVITY (Central)	
Day-30	**Memory Organization**	Basic concepts, Memory hierarchy and it's need, Parameters used to measure the performance.	1
Day-31		Types of memory components., Semiconductor RAM memories, Memory Module Design	1
Day-32		Cache memories	1
Day-33		Mapping functions 1	1
Day-34		Mapping functions 2	1
Day-35		Replacement Algorithms w.r.t Cache (FIFO, LRU and Optimal)	1
Day-36		Memory performance consideration, Memory Interleaving	1
Day-37		Virtual memory organization and Mapping(TLB)	2
Day-38		Tutorial Activity (Quiz/Test/Assignment)	1
Day-39	**ALU**	Design of Adder (n-bit ripple carry adder, carry look ahead adder)	1
Day-40		Multiplication of Positive Numbers	1
Day-41		Signed Operand Multiplication	1
Day-42		Fast Multiplication	1
Day-43		Integer Division (Restoring and non-restoring)	1
Day-44		IEEE Floating-point Numbers and its Operations (Single and double precision)	1
Day-45		Tutorial Activity (Quiz/Test/Assignment)	1
Day-46	**I/O Organization**	Basics of I/O operations	1
Day-47		Accessing I/O Devices, Interface	1

COA Spring 2024-2025 Lesson Plan

Course Name: Computer Organization and Architecture Spring 2024-2025
Course code: (CS21002)
Course Coordinator: Dr. Asif Uddin Khan
Course Teacher:

Day-48		Memory mapped I/O and I/O mapped I/O Programme Control I/O	1
Day-49		Interrupts	1
Day-50		DMA	1
Day-51		**Case Study:**IA-32	2
Day-53		Tutorial Activity (Quiz/Test/Assignment) TUTORIAL/ACTIVITY (Central)	1