

KCA152: COMPUTER ORGANIZATION & ARCHITECTURE LAB

Course Outcome (CO)

**Bloom's
Knowledge Level
(KL)**

At the end of course , the student will be able to

CO1	Design and verify combinational circuits (adder, code converter, decoder, multiplexer) using basic gates.	K ₆
CO2	Design and verify various flip-flops.	K ₃
CO3	Design I/O system and ALU.	K ₃
CO4	Demonstrate combinational circuit using simulator	K ₂

1. Implementing HALF ADDER, FULL ADDER using basic logic gates.
2. Implementing Binary -to -Gray, Gray -to -Binary code conversions.
3. Implementing 3-8 line DECODER. Implementing 4x1 and 8x1 MULTIPLEXERS.
4. Verify the excitation tables of various FLIP-FLOPS.
5. Design of an 8-bit Input/ Output system with four 8-bit Internal Registers.
6. Design of an 8-bit ARITHMETIC LOGIC UNIT.
7. Design the data path of a computer from its register transfer language description.
8. Design the control unit of a computer using either hardwiring or microprogramming based on its register transfer language description.
9. Implement a simple instruction set computer with a control unit and a data path.