

**SES's L.S. RAHEJA COLLEGE OF ARTS AND COMMERCE
(AUTONOMOUS)**



BOARD OF STUDIES: Information Technology and Data Science

Programme: B.Sc. (Cyber Security & Digital Forensics)

Semester: I

Nomenclature of the Course: Computer Organization

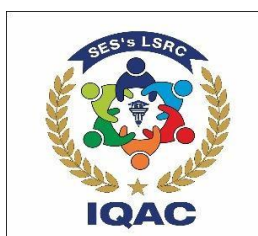
NEP Vertical: SEC

Credit: 02

Total Marks: 50

Academic Year: 2026–27

(As per Choice Based Credit System under NEP 2020)



Unit-wise Detailed Syllabus

Unit	Detailed Contents	Andragogy	Hours
Unit I: Basic Computer Architecture	1. Introduction to Computer Organization and Architecture 2. Functional Units of Computer System 3. Structure of CPU 4. Registers and Instruction Cycle 5. Memory Hierarchy (Primary, Secondary, Cache) 6. Input–Output Organization 7. Interrupts (Basic Concept)	Diagrammatic explanation, Architecture mapping exercises, Problem-solving sessions	15
Unit II: Data Representation & Logic Design	1. Number Systems (Binary, Octal, Decimal, Hexadecimal) 2. Number System Conversions 3. Binary Arithmetic 4. Logic Gates and Truth Tables 5. Boolean Algebra (Basic Laws) 6. Instruction Formats 7. Performance Measurement Basics	Conversion exercises, Logic circuit examples, Numerical practice	15

Learning Objectives

1. To understand the internal organization of a computer system.
2. To learn CPU structure and memory hierarchy.
3. To perform number system conversions and binary arithmetic.
4. To understand logic gates and Boolean algebra basics.

Course Outcomes (CO)

CO No.	Course Outcome	Bloom's Level
CO1	Explain basic computer architecture components	Understand (L2)
CO2	Perform number system conversions and binary arithmetic	Apply (L3)
CO3	Analyze memory hierarchy and instruction cycle	Analyze (L4)
CO4	Construct and interpret basic logic circuits	Apply (L3), Analyze (L4)

Suggested Readings

Sr. No.	Title	Author
1	Computer Organization and Architecture	William Stallings
2	Computer System Architecture	M. Morris Mano
3	Digital Logic and Computer Design	M. Morris Mano
4	Computer Organization	Carl Hamacher

QUESTION PAPER PATTERN

(A) Continuous Evaluation – 20 Marks

Particulars	Marks
Class Test	10
Assignment	10
Total	20

(B) Semester End Examination – 30 Marks

Duration: 1 Hour

Question No.	Description	Total Marks
Q1	Attempt Unit I	15
	A – Remembering	
	B – Analysing	
	C – Applying	
OR		
	P – Remembering	15
	Q – Analysing	
	R – Applying	
Q2	Attempt Unit II	15
	A – Remembering	
	B – Analysing	
	C – Applying	
OR		
	P – Remembering	15
	Q – Analysing	
	R – Applying	